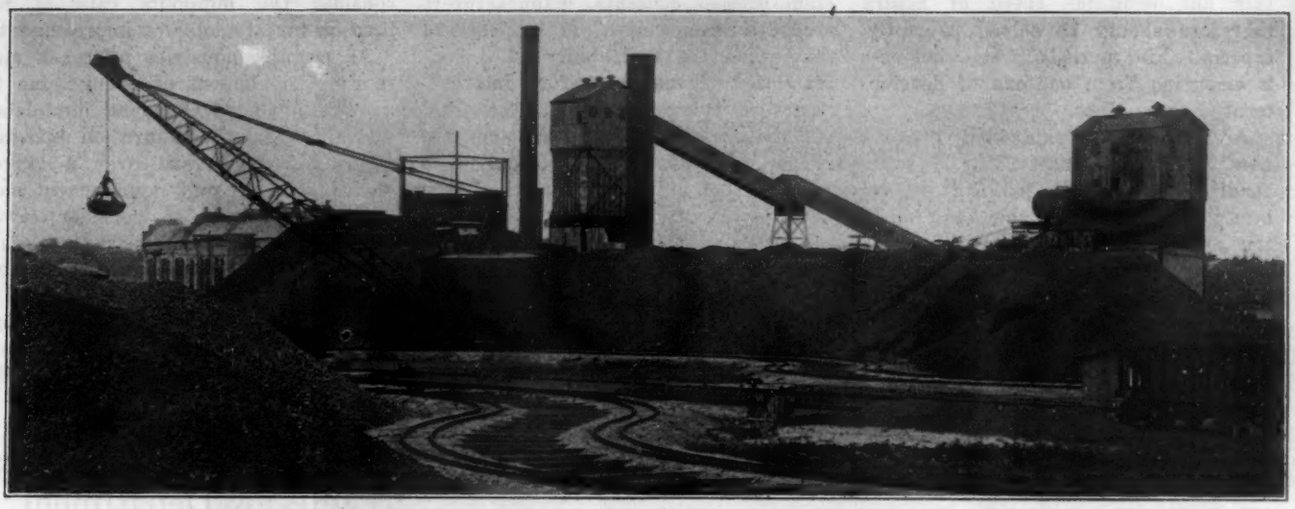

Maintaining plant and equipment at high efficiency and providing for necessary extensions and improvements requires frequent expenditures of new capital

What Is Just Return on Funds Invested in Improvements?

By Warren D. Spengler

INDUSTRY'S growth and development requires an almost continuous supply of new funds, which if properly invested, justify themselves in the form of earnings. Naturally when new expenditures are contemplated, the dominating factor influencing those who make the decision is the question, "When and how will we get our money back?"

A study of the present attitude toward this problem shows that most executives follow the rule that an investment necessitated by growth and development of a plant must show earnings permitting an early return of the principle. The rate of return, which is the percentage of the total expenditure yielded each year, is a widely fluctuating variable, and under existing conditions no two industries seem to agree on a common standard. Considering the stability of the rate of interest on borrowed money, it is surprising that manufacturers have not arrived at closer agreement on the minimum rate of return on expenditures for the extension and for the rehabilitation of plant and of equipment.

ARE you sure you are right in insisting that the total investment for contemplated rehabilitation of plant and equipment yield an arbitrarily fixed high rate of return? Perhaps the compromise suggested here will help you with your problem.—The Editor.

In certain branches of industry funds are not granted for improvements unless a rate of return in excess of 100 per cent can be assured, and even a guarantee of this high ratio is not always sufficient to win approval of an investment. As might be expected, this insistence for a quick return prevails chiefly in newly developed industries or under other conditions where success is not certain and the natural hazards of the business are great. In well-established, successful companies, in which the management is more conservative, rates of return as low as 25 per cent have been adopted as the minimum for expenditures for improvements.

These rates are as much a product of development as industry itself. They have kept pace with each step of progress or retrogression and therefore may be expected to respond to each new significant change in the conditions affecting industry. In other words, the minimum rates are largely dependent on factors outside of the industry involved.

The problem of determining just what is a

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fair and equitable speed of return therefore should be solved promptly, especially in periods when business is emerging from one era of development into another.

A situation of this kind prevails now. During the past 25 or 30 years conditions in the United States have been generally favorable to industry and success has been attainable without exceptional difficulty. The increasing size of individual units, combinations of companies, upward trends in prices, automatically growing markets, the remarkable buying power of the nation's increasing population, the needs incident to developing new sections of the country, and other factors all have combined to assist industry. With these manifold advantages, manufacturers have not been forced to adopt measures of economy as stringent as those employed in many other industrial countries, particularly in Europe. Consequently they have not grasped opportunities for reducing production costs unless the returns were relatively large.

Perhaps the day is not far distant when some of these favorable conditions will have disappeared. Looking forward over a long period, prices may tend downward instead of upward as in the past. Competition from abroad may be stronger and more difficult to meet. The effect of combinations of production units probably will not be as beneficial from now on as in the past. Undoubtedly many of these aids to industry will not continue to be as effective as they have been in the first quarter of this century.

If this reasoning be sound, even in part, manufacturers are justified in giving serious consideration to the problem of determining whether the prevailing ideas on minimum returns on investments for improvements should be changed. If a lower rate can be justified, the industries employing it will in time reap advantages not enjoyed by those who cling to the present conception of high rates.

Too Much to Expect

It is too much to expect that many manufacturing executives will depart from conventional practice in this respect until forced to do so. It is not natural for a conservative to venture into new realms while present success is assured. The usual procedure is to wait until necessity urges action, and then accept the inevitable losses due to procrastination.

It is suggested that in order to escape these losses and yet to avoid the necessity of departing entirely from present concepts, manufacturers accept a compromise. It is proposed that when the desirability of a contemplated investment for improvements is being considered, the total expenditure be segregated and the proper rate of return be applied to each portion individually so that each item by itself is justified according to present standards, although the rate of return on the total will be lower than the customary minimum. If this practice were followed, many contemplated improvements rejected by the present method of figuring would be approved, with the result that eventually lower operating costs will obtain at a time when lower prices and severe competition will prevail.

To illustrate how this suggestion might work out, we may consider the following actual experience of a well known manufacturer, who had had a study made of a change and addition to a portion of his plant. It was estimated that the cost would be about $110,000 and that it would result in a saving of $24,200 annually, after interest and taxes but not depreciation. The saving which was estimated on the basis of a 10-year average business condition, was equivalent to a 22 per cent return on the investment. Inasmuch as the management had been accustomed to require a minimum return of 25 per cent, the expenditure was not approved.

In this case portions of the expenditure were for items of relative permanency. If the progress of the art were such that the process involved were to be changed within four years, these items still would be available for the improved process. Therefore a rate of return on the investment in these items equivalent to that for in their life should have been satisfactory.

Proceeding with the problem in accordance with this method of analysis it was found that a rate of return of 18 per cent on the entire investment would be attractive and yet adhere strictly to the company's previous policy.

Upon further consideration the expenditure was approved and the company now is benefitting from its decision. Within three years the entire investment will have been returned. If at that time, it is desired to reduce the selling price of the product to meet lower prices on competition, a margin of $24,200 that did not formerly exist is available.

The foregoing is only one of several examples that could be cited. The point to be emphasized is that now is the most desirable time to reconsider the minimum rate of return on investments for improvements.

As certain industries approach maturity, the element of change due to growth anad development diminishes and therefore the return on invested funds can be spread over a longer period. As a result management naturally will come to consider lower rates than are now believed satisfactory. The compromise, outlined above, anticipates this trend and offers a means for manufacturers to take full advantage of worth while improvements at a time when they will be most urgently needed.

Ask Reorganization of Interior Department

Committees of engineers are being organized throughout the United States by the American Engineering council in a nationwide movement for reorganization of the department of the interior, it is announced by President James Hartness, former governor of Vermont. The engineers ask that the name of the department be changed to "department of public works and domain," and recommend drastic changes in the distribution of administrative functions so that public works actvities of the government "may be effectively co-ordinated, efficiency promoted, and waste wiped out."

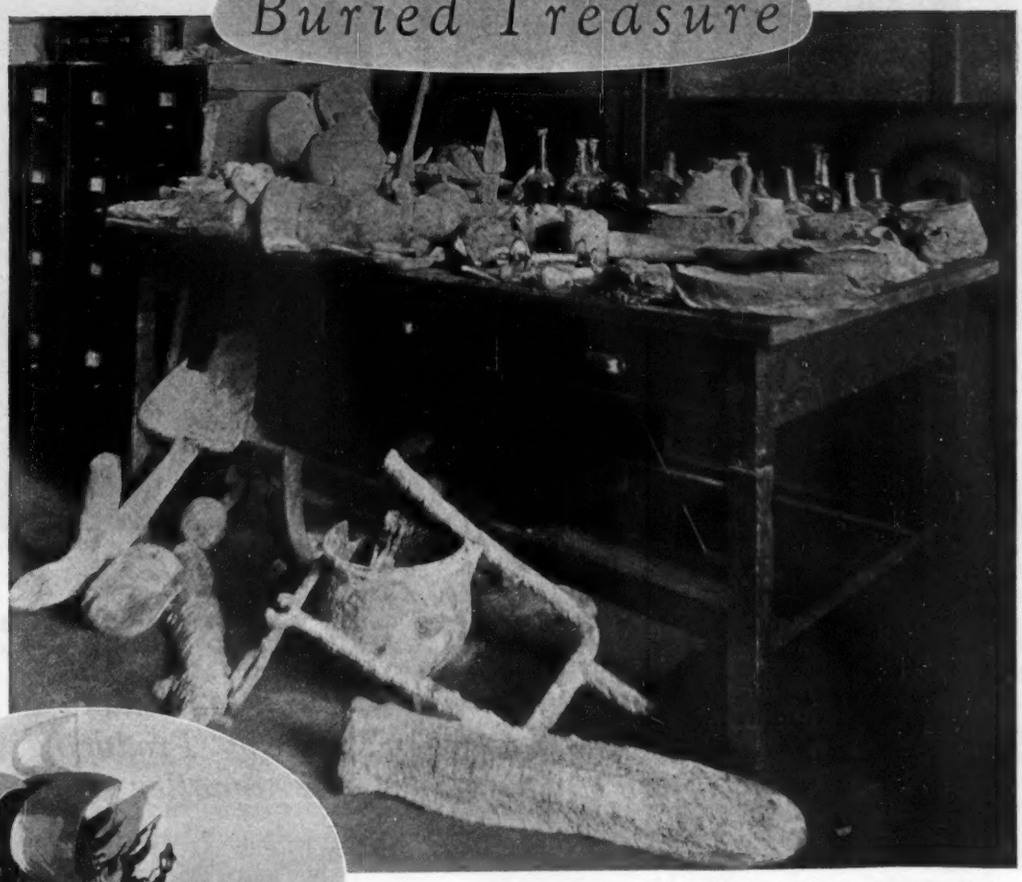
Passage of the bill to be introduced in Congress soon by Senator Wesley L. Jones of Washington and Representative Adam M. Wyant of Pennsylvania, will create a department, the engineers declare, "under which the major public works functions will be consolidated and conducted according to the well-settled precepts of a modern industrial organization."

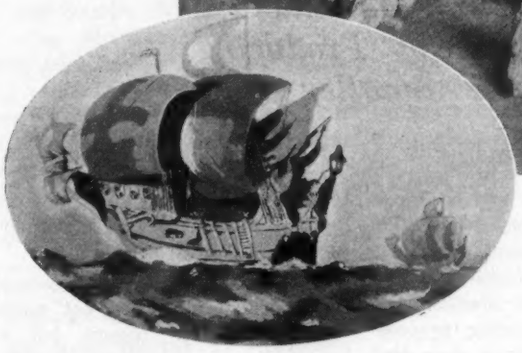
The plan will be publicly discussed at the annual meeting of the council, to be held in Washington Jan. 13-16, at which time the committee on government reorganization, of which Gardner S. Williams of Ann Arbor, Mich., is chairman, will present a report to representatives of 30 national and local engineering societies. The executive committee and administrative board will convene Jan. 13, the assembly of the council on Jan. 14, 15.

Subsidiary Is Formed

The Niles-Crane Corp., Philadelphia, a division of the Niles-Bement-Pond Co., which was formerly known as the Crane Works, has been incorporated with the following officers: President, James K. Cullen; vice president, Sydney Buckley; secretary and treasurer, Charles K. Seymour and assistant treasurer, William A. Corrie.

Buried Treasure





Iron Articles Dug Up; Century Old

A NUMBER of interesting exhibits of the product of the iron industry about the middle of the eighteenth century were unearthed recently by workmen excavating for an addition to the Seamen's Church Institute building at South street and Coenties Slip, New York. In the days when New York was Nieu Amsterdam, a Dutchman by the name of Couraet Ten Eyck, familiarly known as Conraetje or Coentje, had his home and shop there and his name came to be given to the little pier which jutted out into the East river. The ground on which the building work is being done was filled in between 1791 and 1803. Thus the excavating has been done in ground which was a part of the bed of New York harbor up to the end of the eighteenth century, and which, as such, was the graveyard for all kinds of odds and ends that fell off or were cast off the ships.

Several pigs of iron only slightly affected by oxidation are prominent among the objects dug up. One of these pigs distinctly bears the letters "N. York 1752", as well as the figure of an anchor. The lettering on the others cannot be clearly deciphered. Two interesting chunks of iron look like crops from forging bars. These are interesting chiefly because of the remarkable success with which they have withstood corrosion. An old axe, of the kind that was imported in large number from Holland in the Seventeenth century to be traded to the Indians for beaver skins, appears to have been converted almost entirely into oxide.

Most conspicuous of the objects found is a small cast iron cannon, three feet long, with 2½-inch bore, which has been wonderfully preserved. It is believed to have been one of three guns which formed a battery at the landing at Coenties Slip in 1679. There is a double-ended "bar shot" 16 inches long, used by the British navy against the rigging of many war vessels, and liberally used against the American forces defending New York. This is a bar of wrought iron with a cast iron ball at each end. A number of solid shot about 6 inches in diameter and a number of grape shot also were found.

Reginald Pelham Bolton, of the New York Historical society, regards these as the "mute evidence of the bombardment of New York city on the afternoon of Saturday, July 12, 1776, by the British vessels PHOENIX and ROSE with their tenders".

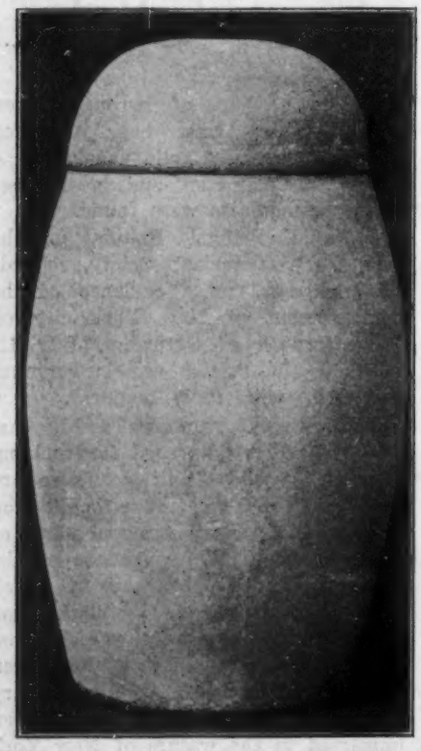
The collection includes a big cast iron pot which was used for cooking. This is in good condition. There are some other castings and wrought iron articles, such as anchors and parts of anchors. The striking feature of the whole exhibit is the way in which this old cast iron and wrought iron has withstood the ravages of corrosion, despite the fact that it has been buried in the earth over a century and a quarter, as well as having been immersed in the waters of New York harbor for an indefinite period.

Making High Grade Steel-III

Stability of Conditions Affecting Manufacture Is Important Factor in Cost of Producing Fine Steel — Profits Are Smaller Now

By John A. Coyle

STABILITY of industry is an important factor in the cost of making high grade steel. During the prewar period, it often was possible to rely on fixed conditions in sources of raw materials and to know with reasonable certainty that the cost of fuel, transportation, crucibles, labor, etc. would not fluctuate sharply. This situation permitted steelmakers to control the manufacturing process within narrow limits and to gain the many other benefits resulting from stabilization.



Typical crucible for fine steel making

The war and its aftermath destroyed these desirable conditions and introduced so many elements of uncertainty that producers not only found it difficult to obtain materials of uniform quality, but also were thrown at the mercy of erratic price conditions, unreliable labor and numerous other menacing factors.

As deflation has progressed, stability has gradually been restored until now many elements of uncertainty have been removed. However the steelmaker finds costs much higher than in 1913. High grade steel in the bar costs practically double what it did before the war. Fuel, power, etc., have more than doubled.

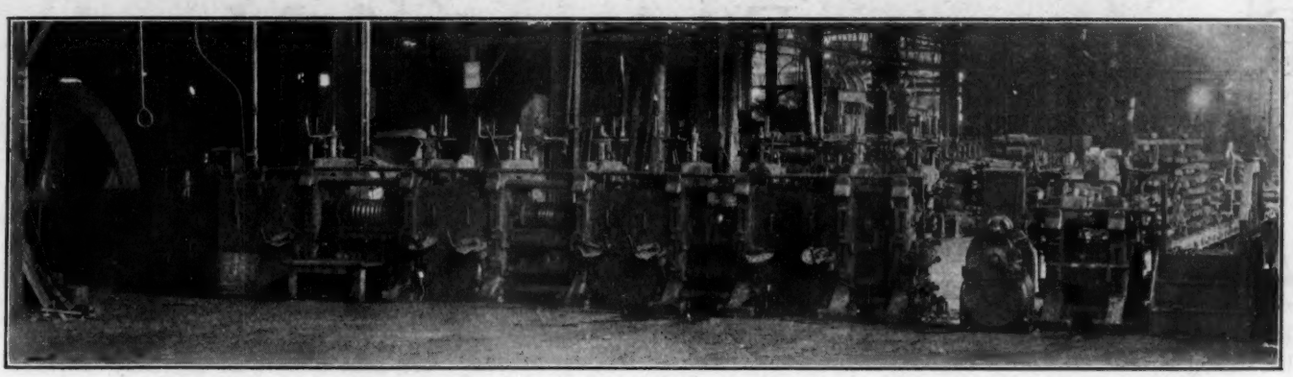
Crucible ingot molds also are more expensive. They must be made of the proper iron and be melted properly, otherwise the molds will "grow," craze or crack, causing poor ingots. Medicine also has increased in cost, as have bottom coke, pipe brick, supplies, crucible clay and materials entering into repairs to furnaces and heating apparatus and machinery and tools.

The items of wages necessary to ingot production have not quite doubled per ton of ingots, but are at least 60 per cent higher. Crucible pots and caps per ton of steel cost

Margin of Profit Is Lower Now

IN THE first two articles in this series on high grade steel, the author explained a number of factors contributing to costs, and pointed to certain responsibilities of the buyers of tool steel. In the accompanying article Mr. Coyle touches on additional phases of the subject and emphasizes the fact that while the price of fine steel is higher than before the war, the producer's margin of profit is considerably lower.

The first article appeared in the issue of Dec. 10 and the second in that of Dec. 24, 1925. Other articles which will appear in alternate issues, will deal with conditions in various branches of the fine steel industry.



A typical bar mill. Rolling tool steel involves exceptional skill to insure correct size and shape

nearly double and their cost would be even higher if we attempted blends of our own clays, instead of purchasing imported clays.

Mills use various methods in breaking down (cogging) the ingot. Many billet their ingots on a mill, while others do it under a hammer. In either case the mill product of either mill or hammer, if welded, is taken to the welding fire to close up the seams and densify the mass. The accompanying illustration shows a tilt hammer, with the hammerman on his moving seat, finishing a carbon steel product. This is work requiring skill.

The relation of former cost to more recent ones are as follows:

	Former	Recent
Cost of genuine crucible ingots, per net ton	$53.56	$ 88.77
Add cost of cogging and welding, per net ton	15.05	45.79
Cost of cogged and welded billet, per net ton	$68.61	$134.56
Add cost of finishing, per net ton	19.85	42.73
Cost of finished section, per net ton	$88.46	$177.29

In the light of the above figures it will be seen that the increase in costs under governing conditions today is serious, though it is pertinent to point out that the margin of the steelmakers profit today is less than formerly. Where the profit formerly, let us say, made the use of a factor of 5 apparent, today's factor by comparison is only 3. The companies making high grade steel are making about 40 per cent less profit than formerly.

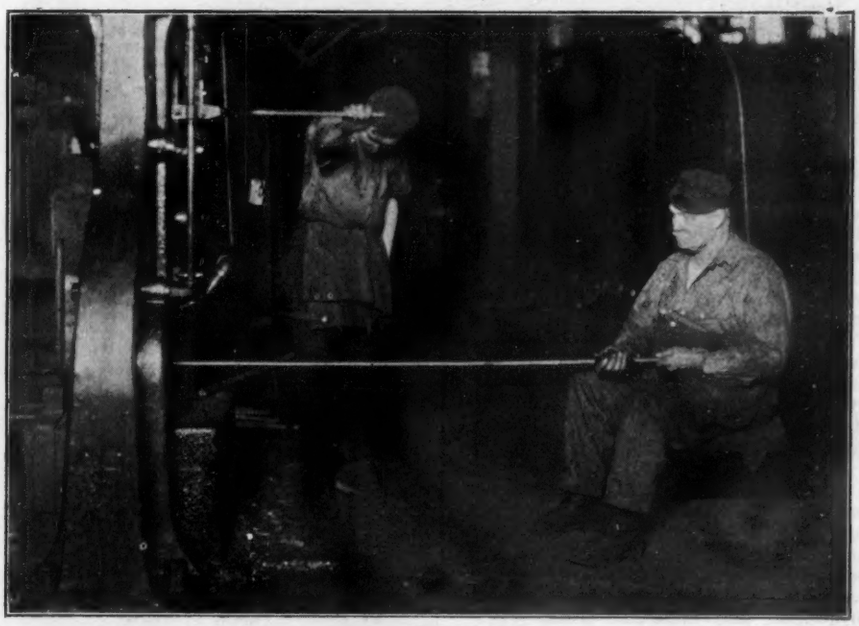
Delays Increase the Cost

When we arrive at the point of finishing a bar or bars on a mill, we commence to experience delays and difficulties, all of which increase the cost while curtailing the output. First of all the rolls have to be set. The machinery is heavy in contrast with the material rolled, and there is required manipulation of screws, both top and bottom, care of roll journal bearings, end thrust, etc. The adjustment of all five of the mill stands is a work of nicety. Try bars must be put through the rolls till the rollerman is sure of size. The bars must be well planished and correctly rolled, and, in the case of squares or flats, the sides must be at perfect right angles with tops and bottom of bars, which must not be leaning or diamonding. Sizing with sufficient accuracy to satisfy the user gives the rollerman, who is paid by the ton, more than considerable concern. After the bars are rolled and have cooled, they are taken to inspection horses or benches, and every defect visible to the eye cut out. If the bars are annealed, this inspection follows the annealing. Grinding with a portable grinder is resorted to in order to rid the bars of superficial hair line cracks or seams. Ends of bars are cropped for examination for piping; brands and labels are attached and bars put up in bundles for shipment, in which either metal or linen tags are used.

Wants By-Product Plant

The Philadelphia Foundrymen's association has appointed a committee to push the project for a by-product coke oven plant at Philadelphia. This committee, which is negotiating with representatives of the city council and the United Gas Improvement Co. of Philadelphia, comprises John Fisler, president of the Manufacturers' club, Philadelphia; Walter Wood, president of R. D. Wood & Co., Wm. W. Hearne, president of Wm. W. Hearne, Inc., and Howard Evans, secretary of the Philadelphia Foundrymen's association. It is the aim of the association to have the city's gas supplied from by-product coke ovens, the resulting coke to serve as a basis for merchant pig iron producing plants in the East.

After receiving further replies to its questionnaire, the association estimates the consumption of foundry iron within 100 miles of Philadelphia aggregates 1,200,000 tons. These figures do not include steel requirements, which are estimated at 1,000,000 tons.



Tilt hammer in crucible steel plant showing hammerman on moving seat

Reports on Fatigue of Metals

Further Study at University of Illinois Devoted To Strength of Steel at Elevated Temperatures and Fatigue Strength of Nonferrous Metals and Carburized Steel

ADDITIONAL results of the investigation on the fatigue of metals being carried on at the University of Illinois in co-operation with the National Research council, the Engineering foundation, General Electric Co., Allis-Chalmers Mfg. Co., Copper and Brass Research association and the Western Electric Co. are presented in bulletin No. 152 just issued by the engineering experiment station, Urbana, Ill. The report, which follows those given in bulletins Nos. 124, 136 and 142, deals with the following somewhat loosely related subjects:

1. Fatigue strength and static strength of steel at elevated temperatures.
2. The effect on fatigue strength of stress intensification at a small hole.
3. Magnetic analysis as a test for fatigue strength of steel.
4. Fatigue strength of nonferrous metals.
5. Fatigue strength of case-carburized steel.
6. Testing machines for repeated stress.
7. Miscellaneous test results for metals.

The authors are H. F. Moore, research professor of engineering materials, who is in charge of the investigation of the fatigue of metals, and T. M. Jasper, research associate professor of engineering materials, who is engineer of tests of the investigation.

The conclusions reached as a result of the investigation on steel at elevated temperatures is summarized as follows:

"At elevated temperatures a marked difference was found between the ultimate tensile strength of various metals as determined by ordinary static tension tests and as determined by prolonged and retarded tension tests (12 to 72 hours per specimen). This difference became noticeable at temperatures varying from 400 to 800 degrees Fahr. As temperatures increased beyond these limits the ratio of ultimate tensile strength as determined by ordinary tests to ultimate tensile strength as determined by prolonged and retarded tests also increased.

"Of the metals tested those having a high nickel content (pure nickel, monel and cyclops) showed the least falling off of ultimate tensile strength and proportional elastic limit as temperatures were increased. This was true both for ordinary tests and for prolonged and retarded tests.

"Fatigue tests of specimens subjected to reversed flexure at elevated temperatures have been carried out on a number of different steels. All these fatigue tests were run at a speed of 1500 cycles of stress per minute. For two of the steels tested (0.49 carbon steel, normalized, and S.A.E. Steel 2340, Treatment C) the endurance limits increased slightly from ordinary temperatures up to 900 degrees Fahr. and 500 degrees Fahr., respectively; for the other steels tested the endurance limit decreased slightly from ordinary temperatures up to temperatures of about 800 degrees Fahr. For all steels tested the endurance limit fell off rapidly for temperatures above 900 degrees Fahr.

"Above some particular temperature for each steel tested the endurance limit approached in value the ultimate tensile strength given by prolonged and retarded tests. This suggests that the results of a fatigue test at 1500 cycles of stress per minute, which was the speed used in this investigation and which involves very rapid loading and unloading of a specimen, should be compared with the results of an ordinary static test rather than with those of a prolonged and retarded test."

Examines Effect of Small Holes

The conclusions on the effect of small holes on specimens are stated as follows:

"The results of the tests on specimens with holes and with fillets of small radius show that the effect of holes and fillets in intensifying stress is not so serious as the mathematical theory of elasticity would indicate. The test results show that small holes reduce the strength of a specimen to resist reversed flexural stress to values varying from 57 to 82 per cent of that of the specimen without a hole, the average being 74 per cent; the mathematical theory of elasticity indicates a reduction to a value of 33 per cent."

In summarizing the conclusions on magnetic analysis, the authors state that tests on specimens from turbine disks show that the type of magnetic survey used furnishes an indication as to homogeneity or as to internal stress conditions in steel but does not clearly distinguish good steel from poor steel from the viewpoint of this research.

The major portion of the bulletin is devoted to the work done on the fatigue strength of nonferrous metals. Examination of S-N diagrams drawn for 31 series of fatigue tests on 21 different nonferrous metals shows the following:

"(a) In five cases, relating to monel metal and duralumin, no evidence is found of the existence of an endurance limit although tests were run to several hundred million cycles of stress.

"(b) In nine cases endurance limits are seen almost as distinctly marked as are those of wrought ferrous metals; in these tests the metals were aluminum, naval brass, aluminum bronze and several magnesium alloys.

"(c) In the remaining 15 cases the metals show fatigue properties intermediate between those of the other two groups; each metal appears to have an endurance limit which lies within a range of stress that is not so clearly marked as it is in the case of wrought ferrous metals.

"As a basis for determining a safe working stress for a nonferrous metal under repeated stress, it is suggested that, for metal showing no well defined endurance limit, the stress which will cause failure be taken as that stress for which a logarithmic S-N diagram, or a tangent continuing the S-N diagram beyond the range of test data, intercepts the co-ordinate which represents the estimated "life" of the structure or machine in which the metal is incorporated.

"Cold drawing is, in general, very effective in increasing the static elastic strength and the static ultimate strength of nonferrous metals. Available test results indicate that cold drawing is much less effective in raising the fatigue strength of the nonferrous metals tested. The proportionate improvement of fatigue strength caused by cold drawing is much less for nonferrous metals than is the case for steel.

"From available results of fatigue tests of nonferrous metals it appears that the ratio of endurance limit to ultimate tensile strength is distinctly lower for nonferrous metals than for wrought ferrous metals. (For wrought ferrous metals the ratio ranges from 45 to 55 per cent). Furthermore, for different nonferrous metals, and for different treatments of the same nonferrous metal, this ratio varies widely.

"Available test results indicate that for nonferrous metals fatigue strength cannot be determined reliably by short-time tests in which the rise of temperature of the specimen is measured after about a thousand cycles of stress."

Test results indicate that case carburizing accompanied by suitable heat treatment is a promising means of increasing the fatigue strength of low-carbon steel under cycles of flexural stress. Increases of endurance limit as high as 162 per cent were noted in the fatigue tests made. Case carburizing without suitable heat treatment may not be effective in raising the fatigue strength of steel.

Pouring Device Improves Yield

Head Pressure of Ladle Is Broken by Refractory Float and the Steel Flows into Mold by Gravity—Gases, Which Otherwise Become Entrapped, Are Liberated—Splashing and Its Effects Are Counteracted

By John D. Knox

IN THE manufacture of iron and steel and other metal products, especially high-carbon and alloy steels, many difficulties are encountered in casting solid compact ingots, due to the formation of blow holes and "pipe," which are formed in the process of pouring and during the period of solidification. These blow holes or bubbles, which are caused by trapped gases in the ingot, it is found, do not always weld during subsequent rolling of the metal.

Chemical constituents play an important part in minimizing the amount of piping blow holes and segregation in steel ingots but if undue care is not used during the pouring or teeming process, these defects will occur despite the chemical specifications of the heat. Piping usually is caused by the metal cooling unevenly; that is, the steel first in contact with the mold, cools more quickly than the metal in the center. This results in the formation of an inverted pear-shaped cavity at the top.

The elimination of the gases such as hydrogen, nitrogen, carbonic oxide, etc., is another problem which open-hearth superintendents have to face. These gases become occluded in the steel, causing the structure to become honeycombed, as may be seen upon the examination of the fracture. When the metal cools from its fusion point, the gases separate and fill the cells. An ingot in this condition run through the blooming and finishing mills, usually results in the rejection of the finished commodity.

Nozzle Pressure Affects Ingot

In the ordinary method of pouring ingots the metal is discharged from the ladle through a nozzle. The ladle may contain 100 tons of metal, the ladle nozzle usually being ½-inch to 3 inches in diameter. Due to the quantity of metal in the ladle, it is evident that there is a high head pressure on the metal pouring from the ladle nozzle. This stream forces itself to a considerable depth into the metal previously poured. This causes the slag and impurities which may come to the surface, to be forced down again into the metal in the mold. The gases, in the form of blow holes forced deeper into the metal, cannot rise readily to the surface until the stream from the ladle is shut off. Some of the blow holes or gases are forced too deeply into the ingot to again rise to the surface, and, the top freezing over quickly, traps the gases within the metal, thus preventing their escape.

When the imprisoned gases in the metal are liberated they collect into bubbles shortly after the steel begins to solidify. The gas bubbles adhere to the solid particles of metal forming cavities. Since solidification

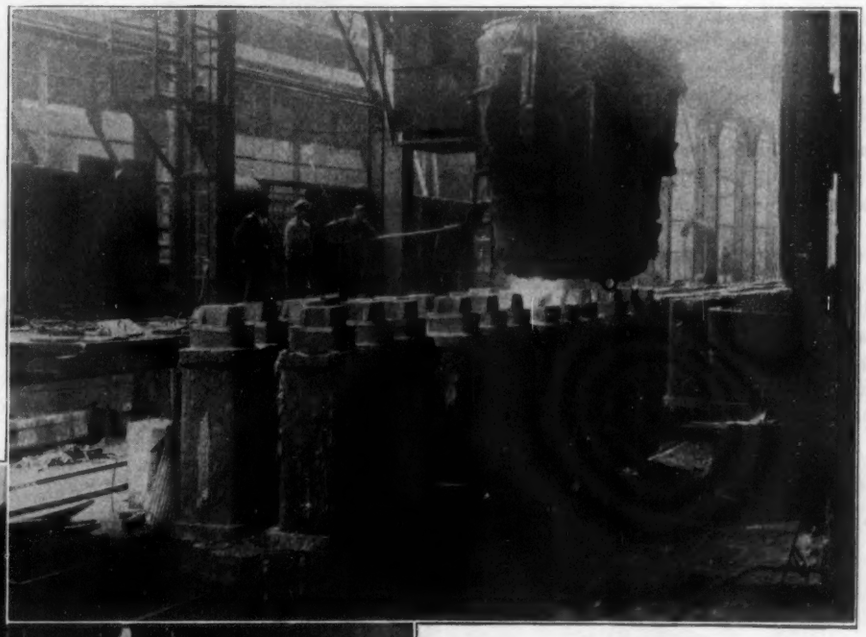


FIG. 1 (LEFT) MOLDS IN FOREGROUND WERE POURED FROM A LADLE WITH A RUNNING NOZZLE. THE YIELD WAS 85 PER CENT

FIG. 2 (ABOVE) HEAT OF OPEN-HEARTH STEEL BEING POURED INTO MOLDS EQUIPPED WITH REFRACTORY RESERVOIR AND FLOAT

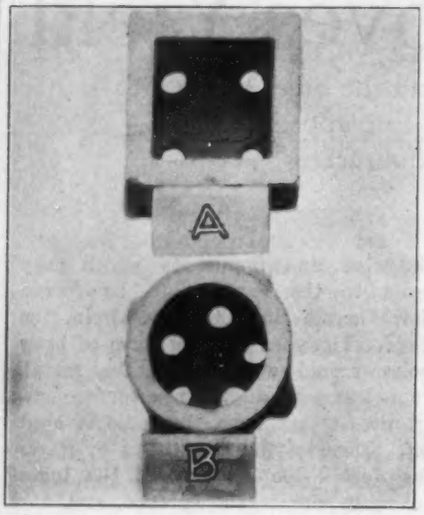


FIG. 3—TYPES OF POURING FLOATS. TYPE *A* IS WIDELY USED. TYPE *B* HAS BEEN DISCARDED BECAUSE IT INDUCED THE STEEL TO SWIRL

proceeds from the sides of the ingot to the center, the dispersed cavities usually are found towards the sides of the ingot. If the blow holes are located close to the surface, they invariably cause seams, or hair-like cracks, which of necessity must be chipped or ground before the product can be shipped to the customer. Again if the blow-holes are deep-seated, they cause failures when the material is put to the use for which it is manufactured.

In the ordinary method of pouring, the pressure behind the stream issuing from the ladle nozzle strikes the stool with considerable force. This causes the metal to splash the mold and freeze, resulting in scabby ingots. This also is true of running or leaky stoppers over which the steel

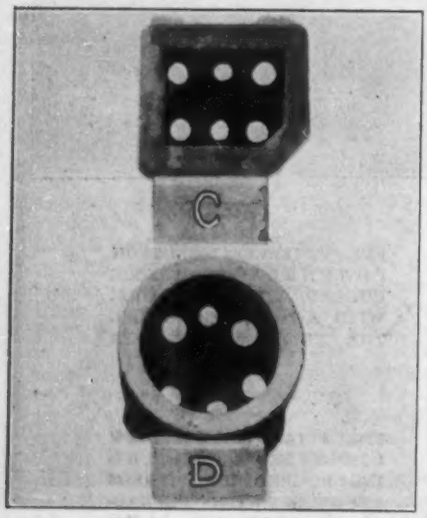


FIG. 4—TYPES OF POURING FLOATS. TYPE *C* IS MADE WITH ONE CORNER CUT AWAY TO PROVIDE A PEEPHOLE. TYPE *D* LIKE TYPE *B* IN FIG 3 HAS BEEN DISCARDED

pourer has no control. Many heats are poured at a high temperature, which causes the stream to have a forceful cutting effect in the stools and bottom of the molds, thereby causing stool and mold stickers. It generally is accepted that so-called hangers cause cracked ingots.

When the metal is first poured, the mold being cold causes the steel to freeze; in other words, the ingot, due to the difference in temperature between the metal and the mold, shrinks from the center toward the sides of the mold. When the pouring of the ingot is finished, the top freezes, the metal shrinking toward the sides, causing a sink head or gas pocket, due to the fact that the metal freezing on top does not allow sufficient metal to fill the shrinkage cavity formed during the period of solidification.

It was to overcome the foregoing difficulties that the reservoir and float method of pouring steel was conceived. This device, which consists of a reservoir and a float as shown in Fig. 10, is made of a first quality fire brick material and manufactured by the Portsmouth Refractories Co., Portsmouth, O. The reservoir rests directly on the top inside edge of the mold, although it may be placed as far down in the mold as desired. It also is used with marked success with the

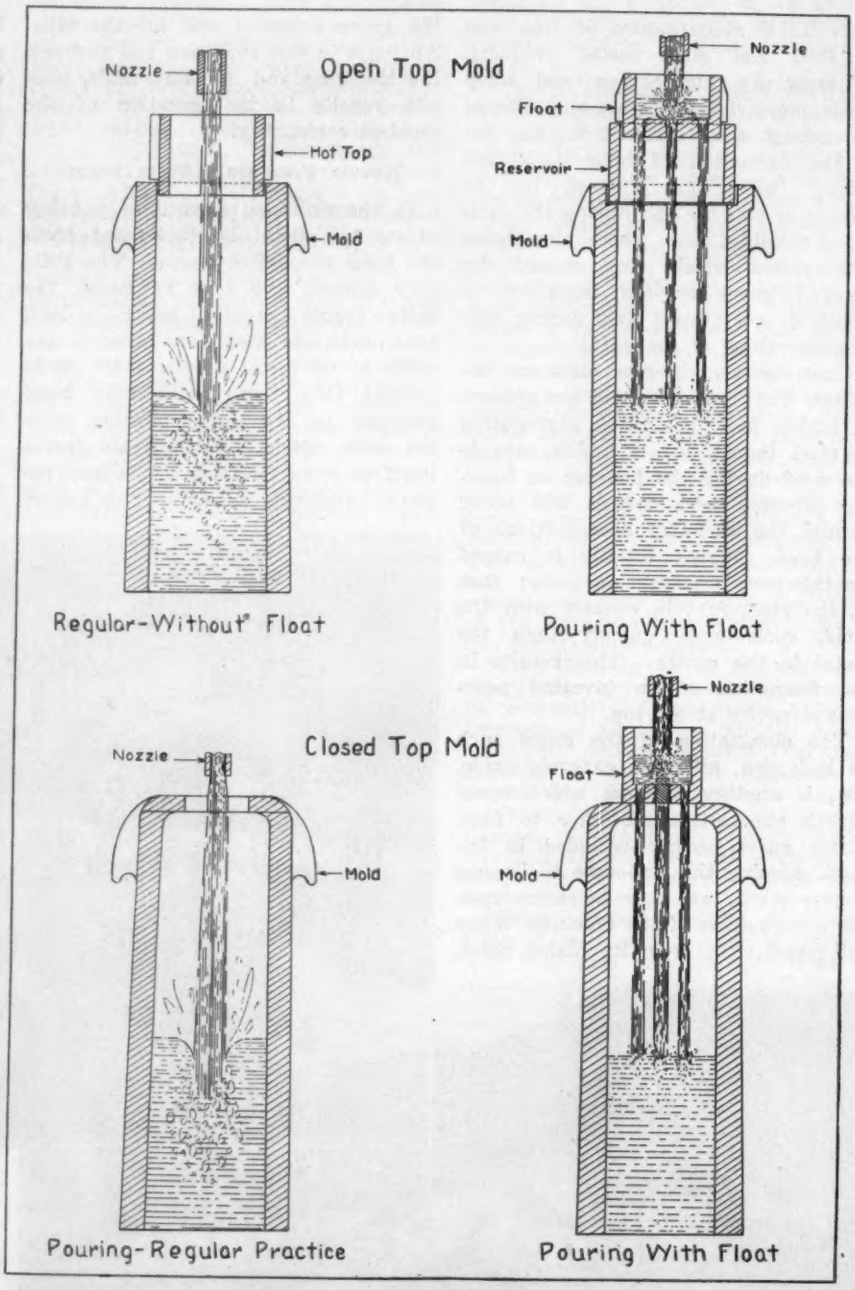


FIG. 5—DIAGRAMATIC VIEW OF POURING INGOTS SHOWING THE PENETRATING EFFECT OF THE STREAM OF METAL FROM THE LADLE WHEN USING MOLDS WITH AND WITHOUT A POURING DEVICE

notched mold as shown in Fig. 6. The float rests on top of the reservoir and can be lowered into it to any desired length. Various types of floats manufactured are shown in Figs. 3 and 4.

The bottom of each float, as will be noted, has four or more holes each being located as far from the center as possible. The diameter of the openings varies according to the grade of steel being poured, the size of the ladle nozzle, the size of the heat being poured, and the shape of the ladle. If a high ladle is used the static pressure is greater than when a small ladle is used and, therefore, the holes in the float must be made larger. In the case of acid steel, however, the fluidity permits the use of small openings. Floats now in use at various steelworks usually are provided with 2-inch openings, one in each corner.

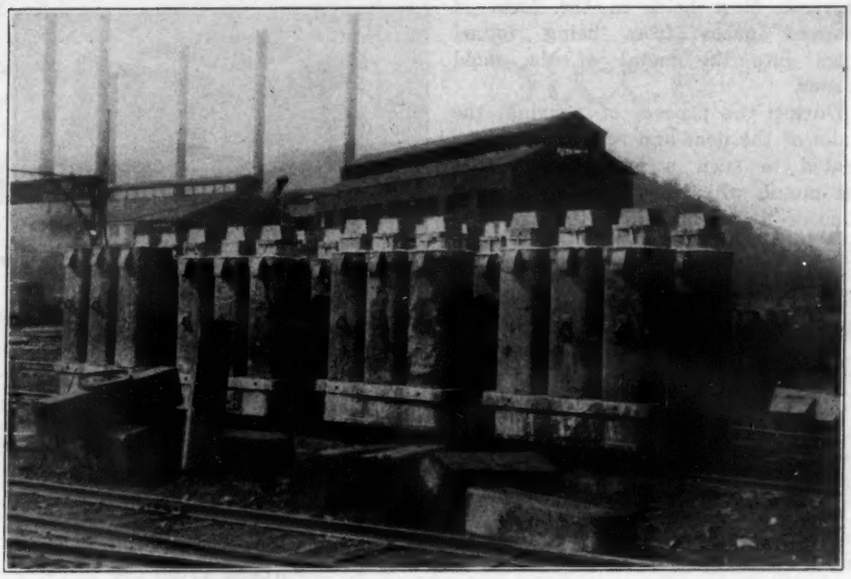


FIG. 7—THIS BATCH OF MOLDS IS OF THE NOTCHED TYPE EQUIPPED WITH THE RESERVOIR AND FLOAT DEVICE READY TO RECEIVE A HEAT OF STEEL

FIG. 6—INGOT MOLD OF THE NOTCHED TYPE. THE INTERIOR RIM OF THE MOLD IS 2 INCHES WIDE AND 4 INCHES DEEP TO ACCOMMODATE THE RESERVOIR

The object of the reservoir and float is to secure a large yield of steel from each open-hearth heat and to improve the surface so that chipping is reduced to the minimum. As a result, the net production is increased without increasing the investment of plant equipment. Since the reservoir and float method of pouring as used by numerous steel manufacturers, is similar, the practice of one large corporation will be described. A train of molds with reservoirs and floats installed ready to receive a heat of steel is shown in Fig. 2. Each reservoir rests on the top end of its mold and supports the float. At this plant the steel is poured from the ladle into the float through a 2-inch nozzle.

Metal is poured from the ladle into the float and then drains through the holes in the float into the mold proper. The heavy head pressure thus is confined to the float, the metal flowing through the holes without any penetrating effect upon the metal as it rises in the mold.

The apertures in the float are provided at points off the center of the mold so that the streams draining down, allows the center of the ingot or metal, which is the hottest part, to freely discharge gases or air, and thus form a more solid and compact ingot. It may be observed readily that by pouring the metal into the float, a large portion of the gases escapes before the metal enters the mold, as is shown in Fig. 5. As the metal leaves the float, it again is broken up, this time into four or more separate streams, thus freeing additional gases from the steel. The elimination of the heavy head pressure

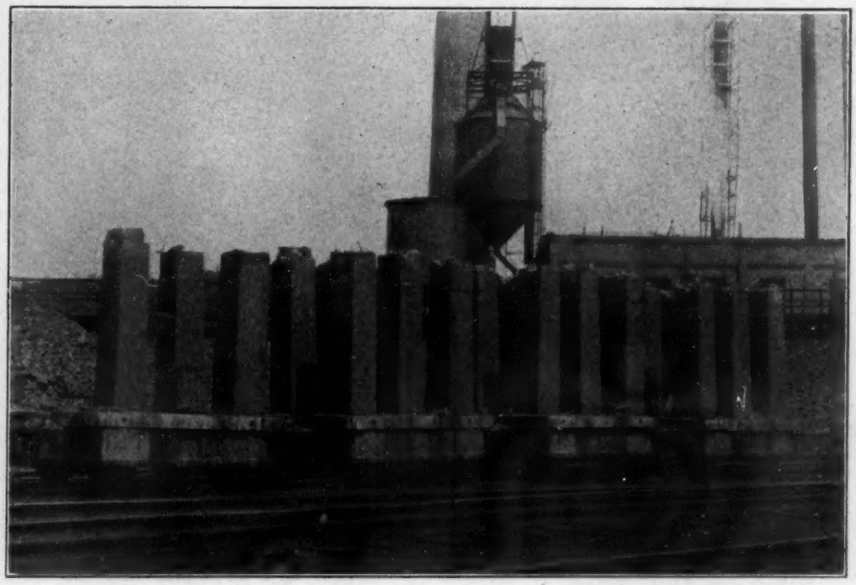


FIG. 8—ALL INGOTS IN THIS BATCH WERE POURED BY THE RESERVOIR AND FLOAT METHOD AT THE PLANT OF AN OHIO MAKER OF ELECTRICAL SHEETS

prevents blow holes in the form of trapped gases from being forced down into the metal of the mold proper.

During the process of pouring, the walls of the float and reservoir become heated to such a high degree that the metal, which is last poured, loses none of its original heat through contact with the walls of the float and reservoir. When the stream is shut off in the ladle, the float, which is lighter than the metal and being a foreign substance from the metal, rises to the top of the reservoir. The float and reservoir, which have become highly heated during the pouring of the steel will retain the heat on the top or upper portion of the ingot for a much longer period than has so far been obtained without the use of any expensive fuels or gases.

Many Advantages Are Claimed

By eliminating the heavy head pressure back of the stream of metal and confining it to the float, the mold proper is allowed to fill without any danger of splash. The metal in the mold rises evenly and at the same time gives the gases and impurities a better chance to reach the surface. When the mold and reservoir are filled and solidification starts, the metal in the upper portion of the reservoir supplies the shrinkage cavity and confines the sink head to the reservoir, thus providing a more compact, solid ingot.

Another advantage of the reservoir and float device for pouring, as pointed out by an open-hearth superintendent,

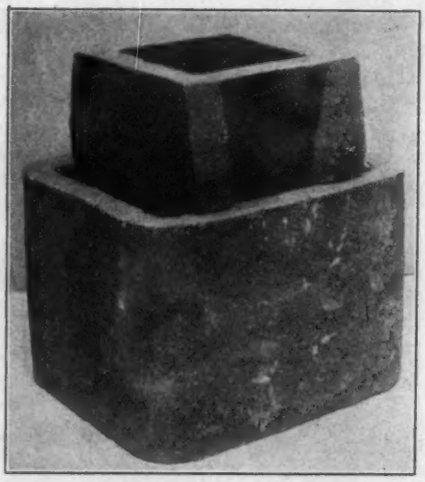


FIG. 10—TOP SECTION IS THE FLOAT AND BOTTOM SECTION THE RESERVOIR. THIS TYPE POURING DEVICE IS FINDING WIDE APPLICATION

is in the case of a leaky or running stopper. The float, which remains on top of the reservoir, counteracts the splash and allows the metal to flow through the holes without the danger of splashing the mold as previously mentioned. It is not necessary to remove the reservoir, each ingot being poured to the top of the reservoir before moving the ladle to the next mold, thus ensuring a yield varying from 82 to 85 per cent free from pipe. Ordinarily when a running stopper develops the refractory top necessarily must be removed.

Shortly after this company adopted the reservoir and float method of pouring, a ladle developed a leaky stopper and presented an opportunity of comparison. The metal was run into each mold until the float rose and a check on this particular heat showed a yield of 85 per cent. A heat poured from a ladle with a leaky nozzle is shown in Fig. 1.

Ingots Easier to Strip

This company also claims a decrease in the number of broken axles in the ingot buggies on account of the ease in stripping afforded by this particular method of pouring. The reasons for this is that the float intercepting the stream from the ladle, allows the metal to drain through the float, by gravity. This prevents the metal from burning into the stool and bottom of the mold. Steel stickers thus are eliminated which obviates the common practice of dropping the ingot mold from the top of the ingot the stool.

It further is pointed out that few bricks adhere to the ingots after stripping is completed. Consequently, little refractory material reaches the soaking pits or the scale pit beneath the roll trains, thus affording in the latter case clean scale for blast furnace consumption. Fig. 8 shows how clean the brick is stripped from the ingot. Investigation discloses that numerous manufacturers of electrical sheets employ the reservoir and float method of pouring their various silicon steels, principally to obtain better surface. Several steel companies also have found it advantageous to use the floating reservoir alone, for improving the surface and to obtain better yields.

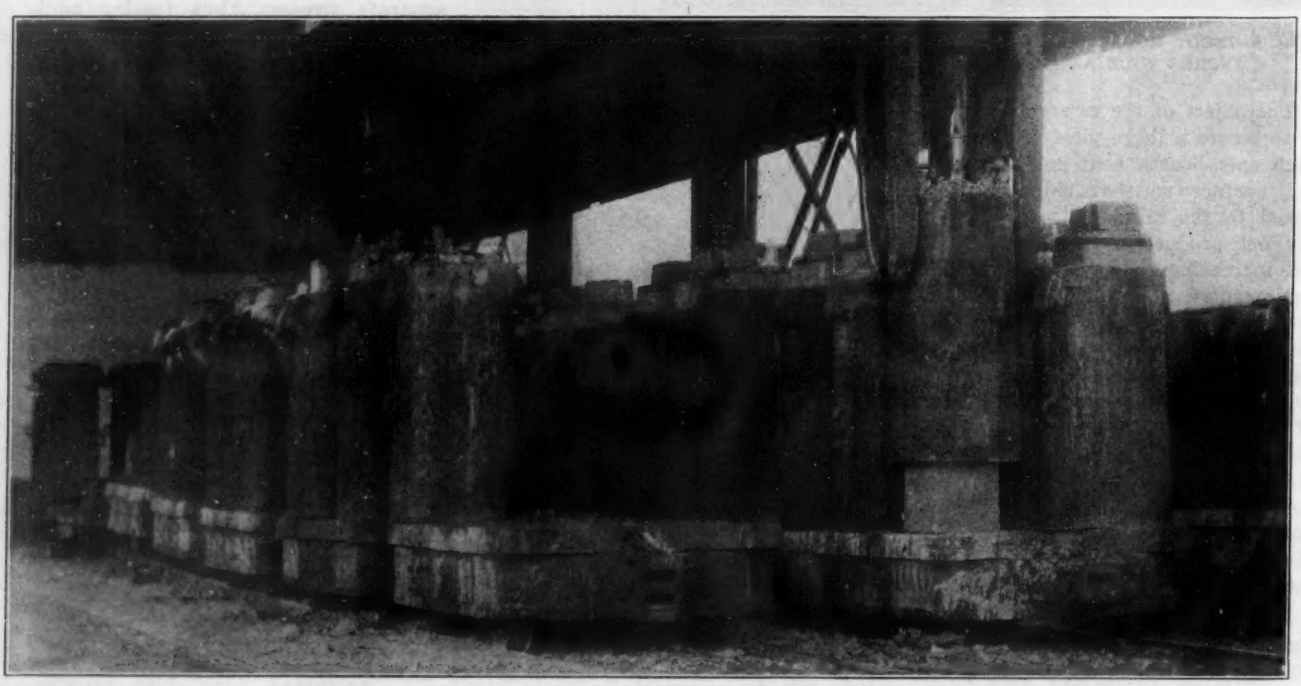


FIG. 9—STRIPPING INGOTS WHICH HAVE BEEN POURED BY THE RESERVOIR AND FLOAT PROCESS. A LARGE PORTION OF THE REFRACTORY MATERIAL IS REMOVED WITH THE MOLD

Large Uses of Steel In Small Ways

APPROXIMATELY 1000 tons of steel wire is consumed annually by a manufacturer of patented screws which are used for joining sheet metal and making fastenings to sheet metal, and for making permanent assemblies to steel, cast iron, brass, aluminum, bakelite and the like. The screws for joining sheet metal and making fastenings to sheet metal are known in the trade as hardened sheet metal screws, while those for making permanent fastenings to steel, cast iron, etc., are called hardened metallic drive screws. The distinctive feature of these screws is that they are so hardened after manufacture that they cut their own thread in the material, thus eliminating the necessity for tapping.

The hardened sheet metal screws are used in practically every sheet metal shop and in thousands of plants where sheet metal articles are manufactured. With the adoption of the all-steel body by automobile manufacturers, the automotive industry has become one of the largest users of this type of screw, for fastening down upholstery fabric, attaching weather-strip to all-metal doors, fastening anti-squeak material to hood rests, and for many other applications. One of the leading manufacturers of all-steel body automobiles estimates a saving of more than $25,000 this year by eliminating the tapping of millions of holes.

In using the sheet metal screws, a hole is drilled or punched in the sections of metal to be joined and the screw is turned in with a screw driver. The screw cuts into the metal and binds the sections together firmly. The screws can be removed when necessary and used over again in the same holes without impairing the strength of the fastening.

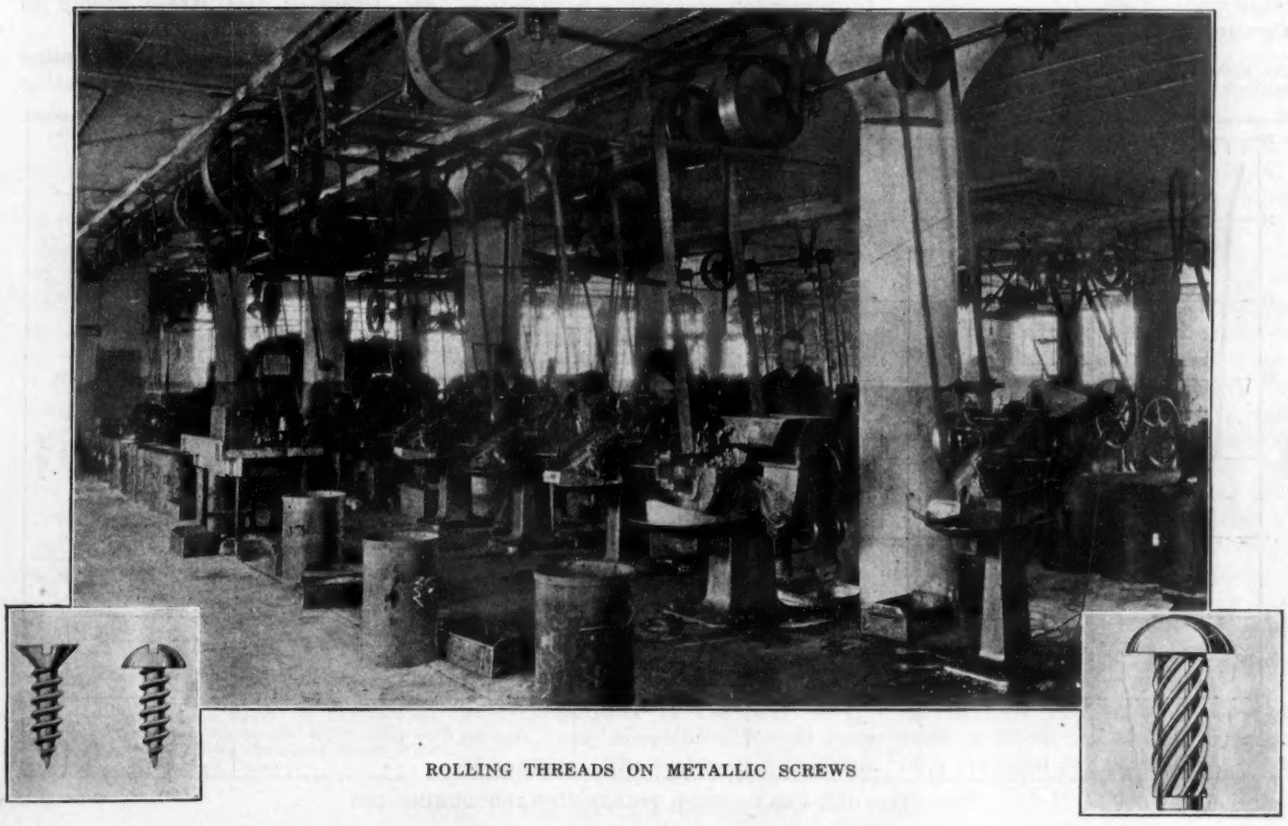
The hardened metallic drive screws are used only where permanent assemblies are desired. Their use is extremely simple. A hole of the correct diameter for the screw is drilled; the tip of the screw is inserted in the hole, and the screw is then driven in

Sheet Metal Screws

THIS is the fifty-fifth of a series of articles dealing with some of the obscure uses of steel which go far toward absorbing the great American tonnage.

The first article on "corsets" appeared Nov. 22, 1923. Other articles appearing fortnightly since are:

Pins
Cotton Ties
Toys
Spinning Rings
Card Clothing
Tie Plate
Tacks
Knives and Forks
Surgical Instruments
Fence Posts
Eyeglass Cases
Fishing Tackle
Dental Drills
Pocket Knives
Rat Guards
Snap Fasteners
Paper Clips
Steel Vests
Electrical Conduit
Radiator Furniture
Notebooks
Metal Beds
Bolts and Nuts
Metal Lath
Tin Cans
Umbrellas
Steel Barrels
Razor Blades
Pens
Steel Wool
License Plates
Hypodermic Needles
Shoe Steel
Crushed Steel
Skates
Needles
Phonograph Needles
Golf Clubs
Mechanical Pencils
Burial Caskets
Telephones
Radio Towers
Brushes
Electric Bells
Bookbinder Wire
Sucker Rods
Watch Hands
Steel Furniture
Highway Markers
Camp Cots
Flexible Shaft
Wood Pipe
Buttons



ROLLING THREADS ON METALLIC SCREWS

with a hammer, as a nail is driven in wood. As the name denotes, hardened metallic drive screws are hardened, which is the reason why they are capable of cutting into the material like a tap without injury to their thread.

Both types of screws have a rolled thread instead of a cut thread. The threads are formed into shape between a set of dies, one rotating and the other stationary. Extremely exacting requirements must be met in the production of these screws, which are rigidly inspected.

Old Stack Disappears

Baird furnace in Perry county, near New Lexington, O. practically has been obliterated from one of the most historical spots in southeastern Ohio. Three homesteaders discovered iron ore deposits on the site in 1812 and after experimenting with their find built a furnace. The government gave the operators an order for cannon balls, the first of which were hauled by oxen and wagon to Perry's fleet on Lake Erie. The projectiles were molded in iron pots. During 1874 the Baird Iron Co. built a closed top stack, 44 x 11½ feet. Approximately 5600 tons of iron was made annually. Raw splint coal was the fuel used while the burden was made up of self-fluxing ore, found in close proximity to the furnace. The stack was rebuilt in 1886 and last operated in 1888.

Carnegie Veterans association held its annual dinner at the home of Charles M. Schwab, Dec. 18 with 21 present. This is all that remains of the original 52 members.

Tungsten Climbs with Shortage Seen

By Charles Hardy

THE tungsten market in 1925 saw higher prices as had been predicted. While the year started around $9 per unit on ore, the end of the year finds a price as high as $12.50 ruling and the prospects are that even this quotation soon will be a matter of the past.

Accumulated stocks, especially in the United States, have been reduced to less than half a month's requirements. Stocks at consuming plants cover requirements for a number of months ahead but this material is not available for sale and simply denotes a return to the policy of laying in supplies to meet any emergency.

Consumption in the United States is keeping up to the expected limits and is likely to increase, while in England, France and Germany it is maintained at a fair average rate. Russia is becoming a factor again, this year buying the equivalent of 1500 tons of tungsten ore in the form of ferrotungsten.

Taking into consideration that business in Germany, France and England will continue bad for some time, there is not a sufficient supply of tungsten ores to meet estimated requirements for 1926, and while an immediate advance in price may be postponed for months, the advance cannot be postponed indefinitely, as consumers' supplies eventually must be replaced. Consequently unless stock withdrawals are replaced month by month, a tungsten market fluctuating within such wide margins as was experienced prior to the war, when within one year advances of 25 per cent to 50 per cent were common, will be in effect again.

Every advance in price has brought about larger production. But at present where is this larger supply to come from?

In the United States several mines probably are capable of producing

The author is head of Charles Hardy, Inc., New York.

Forecast Makes Good

SINCE the accompanying review of the tungsten situation was written the forecast here indicated has been partly fulfilled by the rapid march of events in this field.

TUNGSTEN ORE PRICE TREND POINTS UPWARD DURING 1925

tungsten ore if the price reaches a higher level, but with few exceptions production possibilities are limited, and even at a price advance to $13 or $14 it is not thought possible to bring production in the United States much above 2000 tons.

The most important tungsten producing field in recent years has been China. There, however, political unrest has curtailed production. Further, the Chinese have passed a law as the result of which no new tungsten mines are to be opened where the land can be used for agricultural purposes. The easy mining methods of the past have given way to mining and concentrating, and production costs have increased.

Burma will continue a producer but a larger tonnage cannot be expected from that quarter. Almost every mine in South America shut down with the slump in tungsten and Australia, New Zealand and South Africa have contributed but a small quantity of ore to the world supply during the past few years. Every one of these countries undoubtedly again will contribute ore at the higher prices but it is difficult to interest capital in the reopening of mines.

Higher Prices Are Seen

While during 1925 no new outlet for tungsten in quantities was found, the natural increase in consumption in the legitimate channels shows a consumption for the world of about 10,000 tons a year. Without adequate production to meet this consumption, and it is estimated that consumption will exceed production by at least 20 per cent, prices will go higher.

It is difficult to predict the price trend for 1926 at present, but indications point to higher prices. The foreign market has advanced during the past three months by about 10 per cent and a further advance of 10 per cent is expected. The American market, while firmer, has not followed the advance abroad as consumers have not bought any large quantities. The advance here, however, is sure to come and will be larger than expected if the situation is not realized and purchases made gradually instead of in a panicky way.

Associations Win in New Competition

By O. H. Cheney

THE time is not far when a business man's membership in trade associations will be an important factor in his banker's judgment of his credit rating. Trade association membership is a measure of character, because it shows the member's ability to get along well with others. Trade association membership is a measure of intelligence of the member's business methods, because he is trying to eliminate competitive waste and to use co-operation as an economical promotion weapon against competitive waste in industry because it is doing something for the stability, efficiency and economy of production and distribution.

Competition has come to mean almost anything from advertising to incendiarism. Unrestrained competition has been the cause of practices which are much more dangerous to business and to the public than any instigated by trade associations. In fact, America has discovered that just as liberty could become license and the pursuit of hapiness could become crime, so trade freedom could become "unfair competition." But leaving out of consideration the extreme competitive practices which approach the criminal in intent or effect, the economic waste of so-called competition is appalling. It is undoubtedly the greatest burden of all which are afflicting both producer and consumer.

Ignorance is the cause of economic waste. Ignorance of the nature of business fluctuations is the cause of depressions. Ignorance of the facts of supply and demand is the cause of troubles which afflict the separate industries. Ignorance of efficient business methods is the cause of individual failure. In its earlier decision on trade associations the government set up ignorance as the dominating power in industry. It was almost sacred. It was almost a patriotic duty of business men to be ignorant, they were forbidden to eat of the fruit of the tree of knowledge. But the ban is being lifted and the trade association can now go on with its great work of dispelling ignorance and eliminating waste.

By co-operation through sound, active trade associations business could cut prices, not raise them. By co-operative study of the market, supply and demand operations could be stabilized. By co-operative research in production, costs could be cut. By using the money and energy now wasted in unnecessary competition, quality could be improved. The trade association is the hope of the consumer. That is why, as a banker, the writer believes that the need of the nation is better, stronger, more active, more intelligent, more public-spirited trade associations. Only through them can there be better business men and better business.

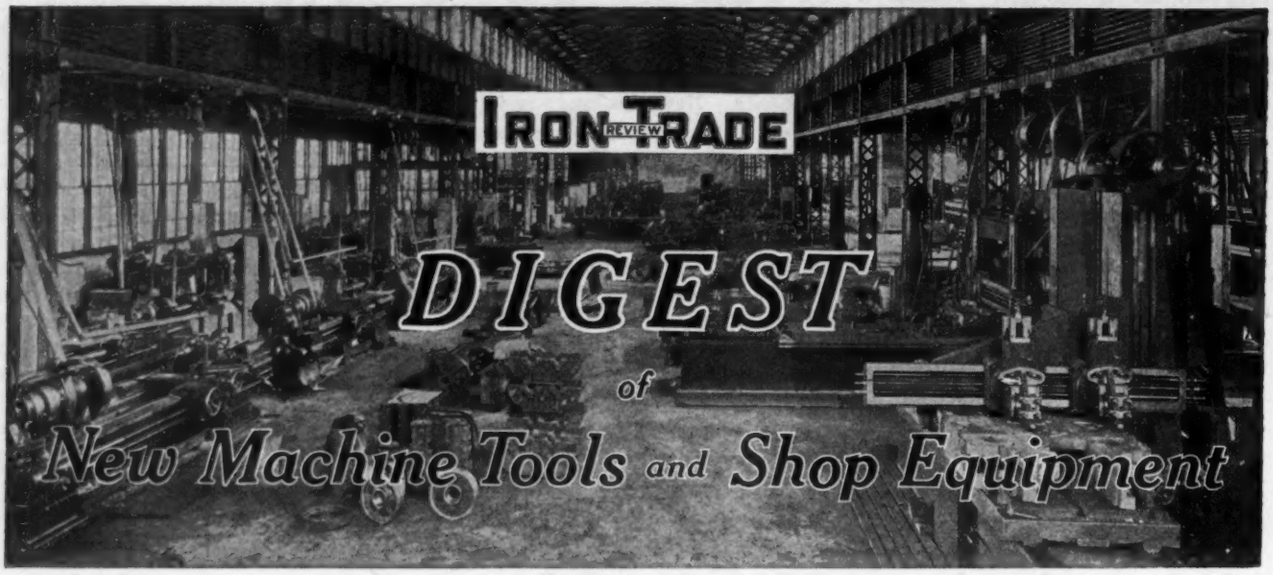
The competitors manufacturers have most to fear are not those in their own industry. There has arisen a new competition in the past decade or two, new competition for all lines of business. The real competition now is not between concerns in the same industry but between different industries, industries supplying similar needs, or even totally different needs. The real competition is not between brands but between products, not for the individual concern's share of the money spent in the industry but for the share of the national income.

The population of the United States is growing fast and its needs are growing faster because its standards of living are going higher. Each manufacturer, therefore, may be sure of a growing business if he keeps competing wares and goods from encroaching on the aggregate business of his industry. And that is a task for the trade association, through co-operative publicity and education.

Too many trade association members belong on the theory of "pay your dues and forget it." They are not getting all they can out of their association. Money is a necessary contribution, of course, but there are others which also pay good returns, interest, co-operative activity, ideas. Above all, what is needed is intelligent follow-up of the trail-making work of the association. Each member should follow up the vital educational work of the association with his own. He should make free use of the ideas it develops because the ideas are ammunition which will win his own individual business battles.

Abstract of address by O. H. Cheney, vice president, American Exchange-Pacific National bank, New York, before the Sheet Metal Ware association, New York, Dec. 8.

Average earnings of factory workers in New York state in November reached $28.65, the highest since 1920. Men averaged $32.45, women $17.85.



Tool Builders Foresee Busy Year

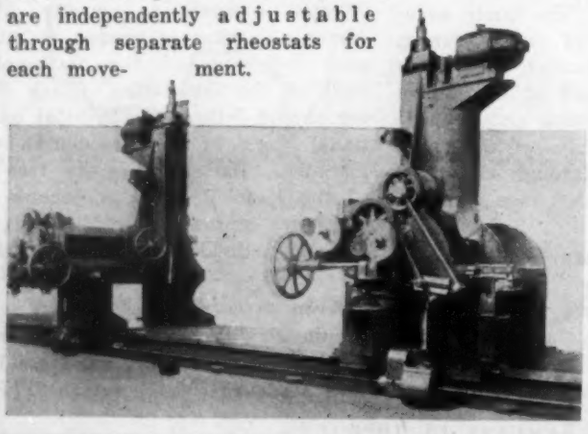
THE beginning of 1926 finds the machine tool industry geared up to high output with prospects for an unusually good first quarter and possibly first half. Following a recession in November, orders showed gain in December and the year came to a close with buying at a higher level than in 1923, the last previous year of good business. Plants manufacturing standard lines of tools are well booked several months ahead and can offer little better than March or April delivery. This condition practically guarantees good business for the first quarter. It is the period following that tool builders view with some apprehension. By now it is well established that purchases of machine tool equipment drop off more rapidly than does general business during periods of declining activity, but so far there are no indications of slack-

(*Continued on Page* 173)

Slotter Employs Electrical Action

No. 1

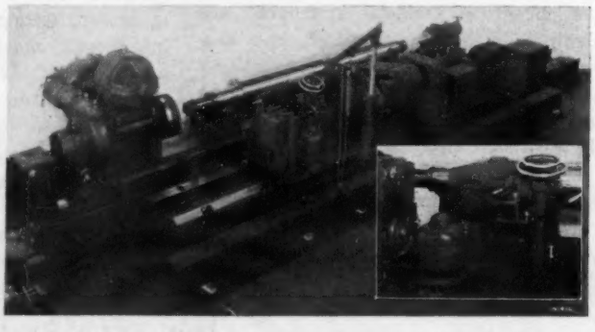
Consolidated Machine Tool Corp., Rochester, N. Y., recently has placed on the market a locomotive frame slotting machine using electrical action for driving, feeding and traversing. The bed consists of a wide, deep casting with long, narrow guiding surfaces for yokes, which bear on chilled faces. Stationary leadscrews are located each side of the bed, with tumbler bearings to prevent sagging. Each yoke and saddle has a separate electric feed and power rapid traverse. Crossrails are arranged with either hand or power swiveling movement for angular slotting. Yoke and saddle feed may be engaged simultaneously for angular slotting. Each ram is driven by a 20-horsepower reversing motor with a high return speed ratio. Cutting and return speeds are independently adjustable through separate rheostats for each movement.



Roll Grinder Requires Four Motors

No. 2

Norton Co., Worcester, Mass., recently completed the manufacture of a roll grinding machine powered by four motors with a combined rating of 70½ horsepower, and a capacity over the bed to swing rolls 54 inches in diameter and 21 feet long. The wheel carriage is self-contained, mounting the table traversing motor, driving the wheel and operating the pump. A 7½-horsepower adjustable speed reversing motor drives the table through a reduction box with seven traverse speeds. An adjustable speed 40-horsepower motor drives the grinding wheel. Truing an accurate radius is possible by means of a diamond radial device. The headstock is fixed on the work bed and weighs 10,850 pounds, 1900 pounds being in the 12-inch alloy steel hammer forged and heat treated spindle alone. Spindle end thrust is taken by a heavy roller bearing. Heavy 3-bearing journal rests support the roll in body grinding operation.



Editorials

Steel Establishes World Record

PRODUCTION of steel ingots in 1925 with 44,186,977 gross tons established a new world steel record. The previous high mark of 43,619,200 tons in 1917 was exceeded by 567,777 tons, or 1.3 per cent. The former record was attained under the pressure of war-time demand, while the new one was achieved solely through unparalleled peace-time needs. In 1923, another peace-time year, ingot output amounted to 43,485,665 tons and lacked but 133,535 tons of equaling the 1917 mark.

At the close of the war belief was common that some time would pass before this country would be able to absorb or consume all of the steel which could be produced with available capacity. In spite of that viewpoint, capacity has been steadily increased and within a brief period of six years, the requirements for steel exceeded the 1917 output by over half a million tons. A study of production figures brings out some interesting comparisons.

During 1914, 1915 and 1916, the three years preceding the country's entry in the war, the United States produced 95,505,913 gross tons of ingots. In the next three years, 1917-19, the first two being war years, output amounted to 120,365,017 tons. For the years 1920-22, steel ingots totaled 94,673,894 tons and for the last three-year period, 1923-25, a production of 124,483,799 tons was attained. The latter is a peace-time record.

The highest production for a three-year period was from 1916-18 when a figure of 128,072,139 tons was reached, but the war influence was the stimulus. With only peace-time demand as a factor, production of the 1923-25 period fell behind by only 3,588,340 tons, or less than 1,200,000 tons per year. Production during 1926 will be watched with interest for already predictions have been made that another ingot record will be established. Should that prediction be accomplished, another three-year peace-time mark also will be set up.

Cutting More Corners in Industry

PLANS now being outlined call for wider scope of simplified practice activities affecting industrial groups. The government is planning to co-operate with the iron and steel industry further if legitimate possibility can be found for the reduction of variety in sizes, dimensions and immaterial differences in products. It is believed more work in simplified practice can be accomplished this year than at any time since Secretary Hoover created a division for this purpose in the department of commerce about four years ago.

Further accomplishments are being brought about more easily since the results of what already has been done have become apparent. Estimates of financial savings may not be entirely accurate. Nevertheless, it is obvious that much waste has been eliminated.

Since the co-operative service between the government and industries has been started, more than 50 simplifications have been accomplished, resulting in an average reduction in varieties of 73 per cent. Twenty-one of these apply to products of iron and steel and other metals. The annual value of manufactured goods affected is estimated by the simplified practice division as being over $2,000,000. Sheet steel producers have estimated savings of $2,400,000, and steel reinforcing bar producers estimate a saving of $4,500,000.

It is evident simplified practice has facilitated mass production. It has helped focus demand on specific varieties, enabling manufacturers to produce for stock in dull seasons. It has stimulated turnover of stocks, and through assured demand as well as delivery when wanted, has aided operation on a smaller stock investment.

Shippers Working with Railroads

SHIPPERS' advisory boards which now are active in nearly all parts of the country afford one of the best examples of co-operation to be found anywhere in industry. For many years shippers and carriers seemed to foster a feeling of antagonism, despite the fact that their interests are interdependent.

As in many other matters, conference has led to an equitable understanding where contest failed. The recent joint conference of the regional advisory boards in Chicago brought together hundreds of shippers and railroad representatives from all parts of the country for the sole purpose of increasing efficiency of railroad operations.

Activities of the regional boards are financed to a large extent by the American Railway association, which is the co-operative organization of the railroads. The most important accomplish-

ments of the shippers' advisory boards are due to the awakening of shippers generally to the fact that railroad problems are their problems.

A definite example of the advantage secured through the shippers' advisory boards is seen in the case of the embargo in Florida. The embargo covers carload shipments. Many shippers, to circumvent it, have ben breaking up carload lots.

This brought about a tremendous increase in the movement of less than carload freight. Through the advisory boards, shippers were told that continued evasion of the embargo would paralyze the freight movement. As a result shipments have been reduced voluntarily. This is the new method of transacting business between shippers and railroads.

Furnace Capacity Shows Increase

PRODUCTION of coke pig iron in the United States in December, according to figures compiled by IRON TRADE REVIEW and reported in its issue of Jan. 7. was at a rate of 105,203 gross tons per day. This was the second highest December rate in history, being exceeded only by the 110,778 tons in the final month of 1918. The 1925 production was made with 233 blast furnaces operating, while the 1918 output required 315 furnaces. On this basis each furnace in December, 1925, produced 452 tons of iron per day, as compared with a rate of 315 tons per day in 1918, the increase being 137 tons.

This increased capacity in furnaces is considerably more noticeable in merchant stacks than steelworks stacks. In December, 1918, merchant iron averaged 26,103 tons per day, 189 furnaces being in operation. The tonnage per furnace per day was 189. In the last month of 1925, 59 merchant furnaces averaged 21,679 tons per day, the rate per furnace per day being 368 tons, an increase of 179 tons per furnace. Steelworks and nonmerchant stacks in the last month of 1918 made 82,666 tons of iron per day, using 213 furnaces, the rate being 389 tons per furnace per day. Last month 174 furnaces of this class averaged 83,524 tons of iron per day. The rate per furnace was 480 tons, and an improvement of 91 tons over 1918.

These statistics emphasize a trend which has been apparent for some time and one which has been the natural result of engineering progress in the design of blast furnaces. Steelworks were quick to appreciate the economies afforded by larger units and lost no time in replacing many of smaller capacity. Most of the large capacity merchant furnaces, however, have been built since 1914 and these have materially affected the average production rate of stacks of this class. As a result, the rates of steelworks and merchant furnaces are becoming more balanced. In 1914, steelworks' production per stack exceeded merchant by 200 tons per day, in 1925, the difference had been reduced to 112 tons.

What Our Readers Are Thinking

Holding Up Uncle Sam?

THE experience of 1925 has been highly encouraging with respect to the competitive ability of the United States in the export of commodities, particularly those in which efficiency and enterprise on the part of producers and traders is able to bring results, while the increase of imports likewise furnishes ground for gratification. But the experiences of the year also have emphasized the necessity for giving careful attention to securing the goods we need from abroad at reasonable prices.

Although the United States is more nearly self-sufficient than any other important country, the maintenance of its high standard of living demands large importation of a number of exotic commodities. In some of these our consumption constitutes half or more of the total world consumption. There has consequently developed in a number of foreign countries a tendency to impose artificial restrictions to enhance the price which must be paid by the United States.

This country itself has always refrained from any governmental measures aiming to enhance the prices of its exports; on the contrary it has a vigorous legislation to prevent its citizens from doing so. The question of measures to combat these exactions deserves prompt and earnest consideration.

The year 1925 closed with our foreign trade in a highly satisfactory situation. Unless unforeseen causes should arise drastically affecting either our own production or the purchasing power of our leading foreign markets, the prospects for the coming year are altogether favorable.

During 1925 the export trade of the United States continued its steady advance, exceeding by more than 7 per cent its value in 1924. The total value of our exports for the year is in the neighborhood of $4,900,000,000, the largest figure since 1920, and representing an increase largely due to increased volume rather than to higher prices. This is an eminently satisfactory showing when compared with that of other leading industrial countries. British exports of domestic products were slightly less than in 1924, and French exports also showed a decline. Those of Germany, in view of the re-establishment of her currency and the at least partial settlement of international complications, have shown some increase, about 6 per cent. After allowing for the changing prices, British exports are only about three-fourths as great as before the war, and German exports a little more than one-half as large, while French exports, as nearly as can be ascertained, have increased slightly. Those of the United States, on the other hand, show a large increase in physical volume, at least 20 per cent.

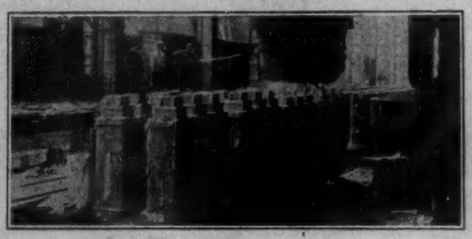
A truly remarkable achievement of American industry is its increase of nearly 60 per cent over 1924 in the number of automobiles exported, raising the automobile to a rank in our export trade surpassed only by cotton and mineral oils—JULIUS KLEIN, *director United States Bureau of Domestic and Foreign Commerce.*

The Reader's Page

Vol. LXXVIII, No. 2 IRON TRADE REVIEW Jan. 14, 1926

Yearbook of Industry Proves JUST THAT

DIVERSITY of subjects, completeness, and readability, identify the annual issue of IRON TRADE REVIEW as the veritable Yearbook of Industry. The issue is notable for the many features of basic importance that were originated and developed by this publication. These include records of steel consumption, world production, business trend charts, and analysis of distribution problems and progress. The Yearbook of Industry contained the most elaborate record of iron and steel prices ever published; the year's market reviews, domestic and foreign, were exclusive. Other exclusive articles included the business outlook at Washington, the realignment of the eastern blast furnace industry, building construction, the new line-up in the iron ore industry. In the 128 editorial pages were 44 photographs, 41 graphs and 88 tables of statistics.



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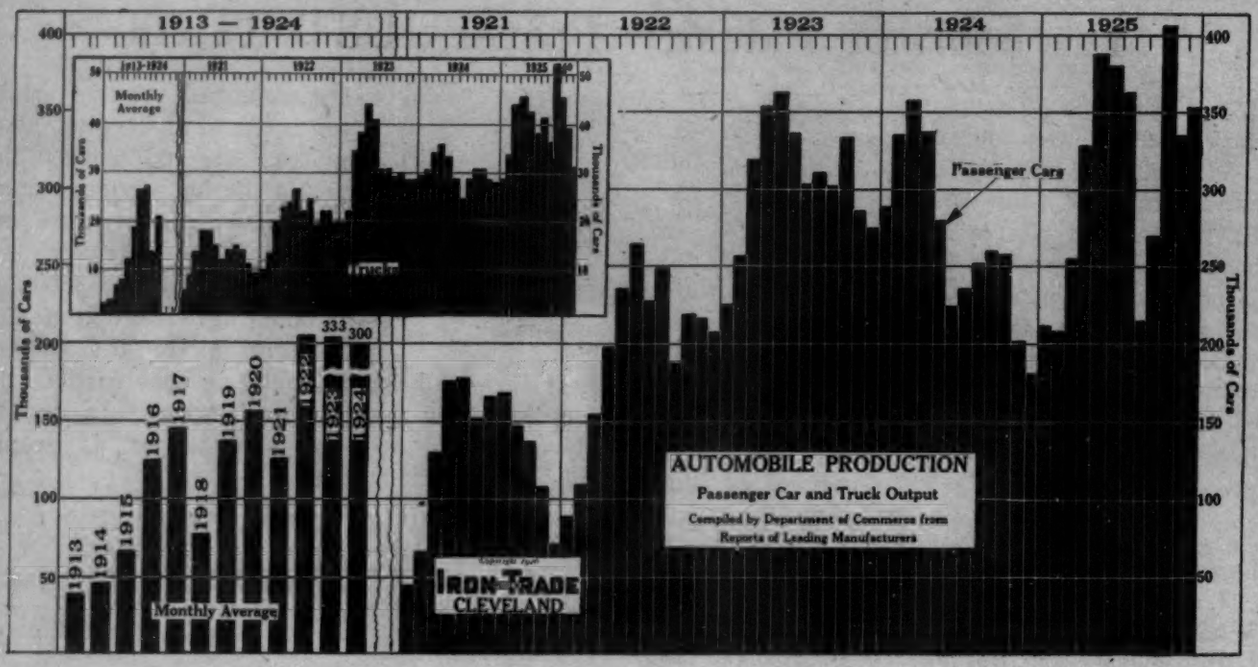
The Business Trend



1926 Starts With Significant Events

By JOHN W. HILL, Financial Editor

THE start of the New Year has been marked by a number of significant events. Most important among them are the advance of the New York federal reserve bank rediscount rate, the rise above normal of the blast furnace index, the large gain in unfilled steel orders, the sharp stock market fluctuations, and the opening of the automobile show.

WHEN the New York rediscount rate was advanced from 3½ per cent to 4 per cent, it was brought into line with other federal reserve bank rates. The action also signified that the tendency of money rates is now definitely, though gradually, upward, after a year of extreme ease and abundance.

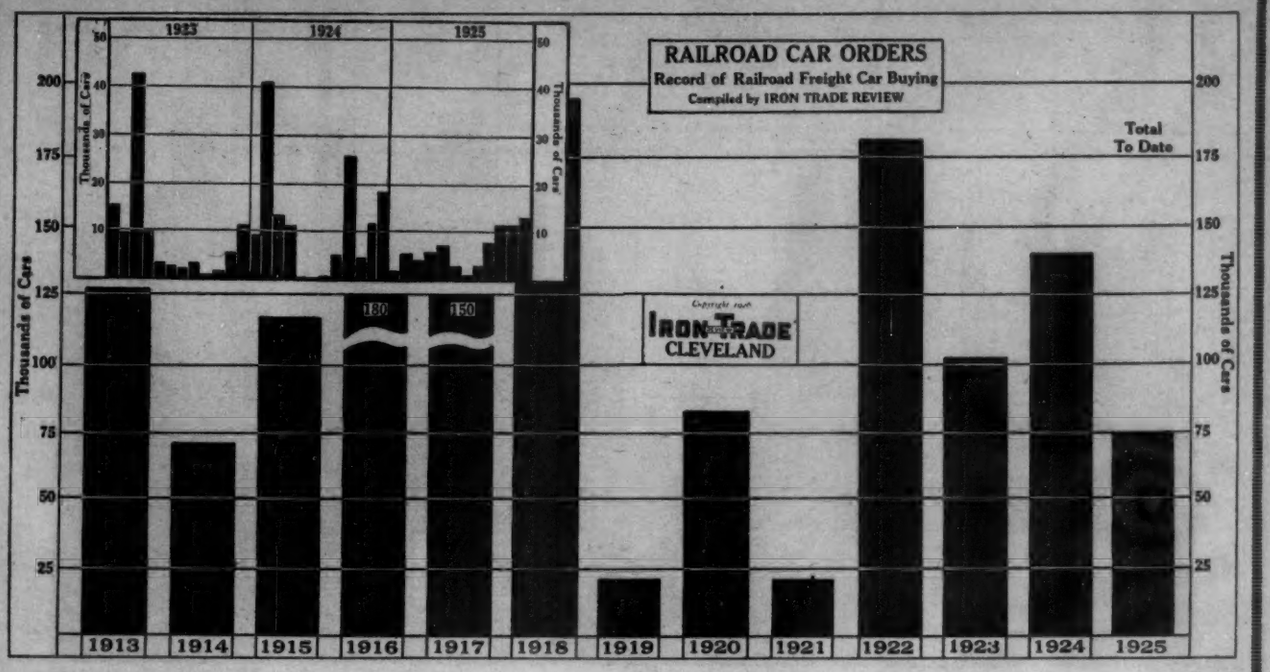
THAT indication is of chief immediate concern for the securities markets. As a result they have been featured by uncertainty and some wide declines recently. The rise of the Blast Furnace Index to 60.5 per cent at the close of December was another warning signal that the top of the historic bull movement may be near.

THE rise of the percentage of furnace activities reflects expanding industry. That means a greater drain upon credit resources for commercial needs. In the competition for funds between commerce and speculation, the former is given precedence. That is why the stock market has been feeling concerned.

ALTHOUGH the purse strings may grow a little tighter when applied to the stock market, credit supplies are far from being near depletion. Last week cash ratios of the federal reserve system increased, showing a normally stronger financial position for the season. Business expansion will not be hindered in 1926 by money stringency.

OPENING of the motor show in New York was of wide interest. Any indication of probable automobile demand for this year will give a good index of general buying. Nineteen twenty five brought motor car output to the highest level in all time, with 4,388,000 cars and trucks against the former peak of 4,080,000 in 1923.

The Business Trend

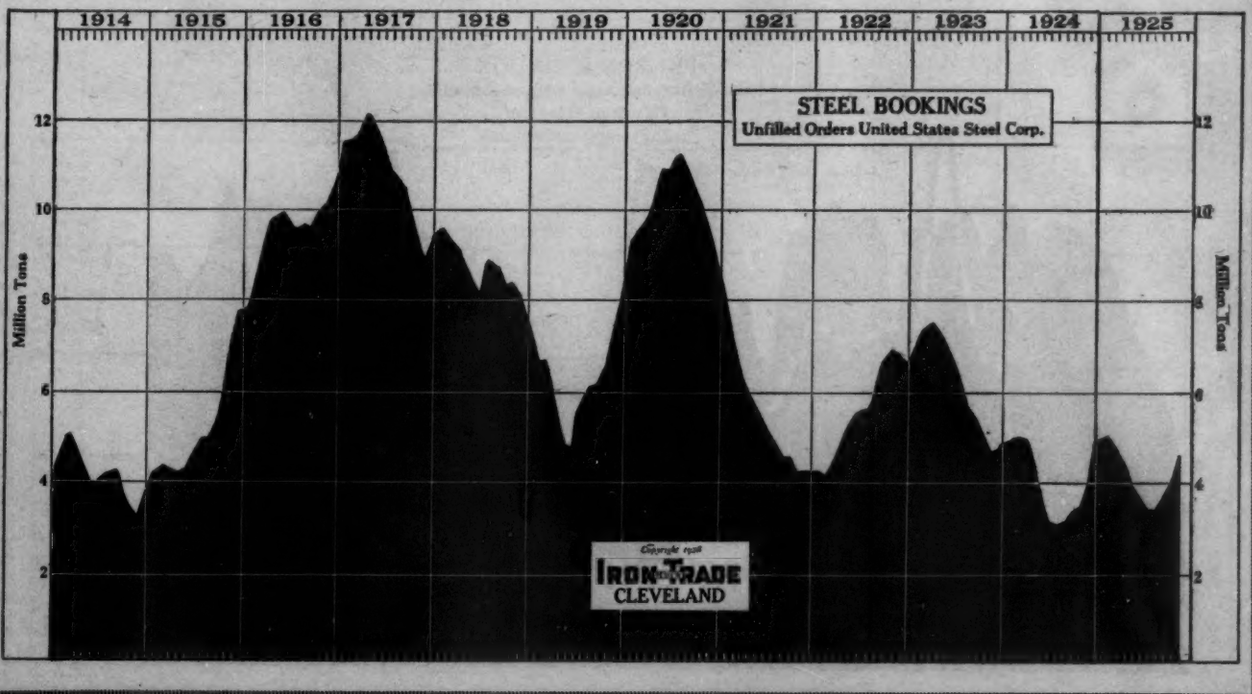


Car Awards

ONE of the most encouraging signs of the business outlook is found in the rising tide of buying by the railroads. In December the roads placed orders for 16,885 freight cars. This was the largest total for any month December 1924. To the December total has been added 3500 cars placed in November but not reported early enough to be included in the November total. The aggregate for the year was 77,110 cars, against 144,000 in 1924. The ensuing year is expected to show big gains in car awards.

Unfilled Orders

THE United States Steel Corp. entered the new year with orders on its books for 5,033,000 tons. This was an increase over the total for one month before of 451,584 tons. The increase for December was slightly behind the gain of 472,000 tons in November, but with that exception it was the largest for any month in a year. Orders on Dec. 31 were 217,000 tons more than were reported at the corresponding time one year ago. They were the best for any month since last February.



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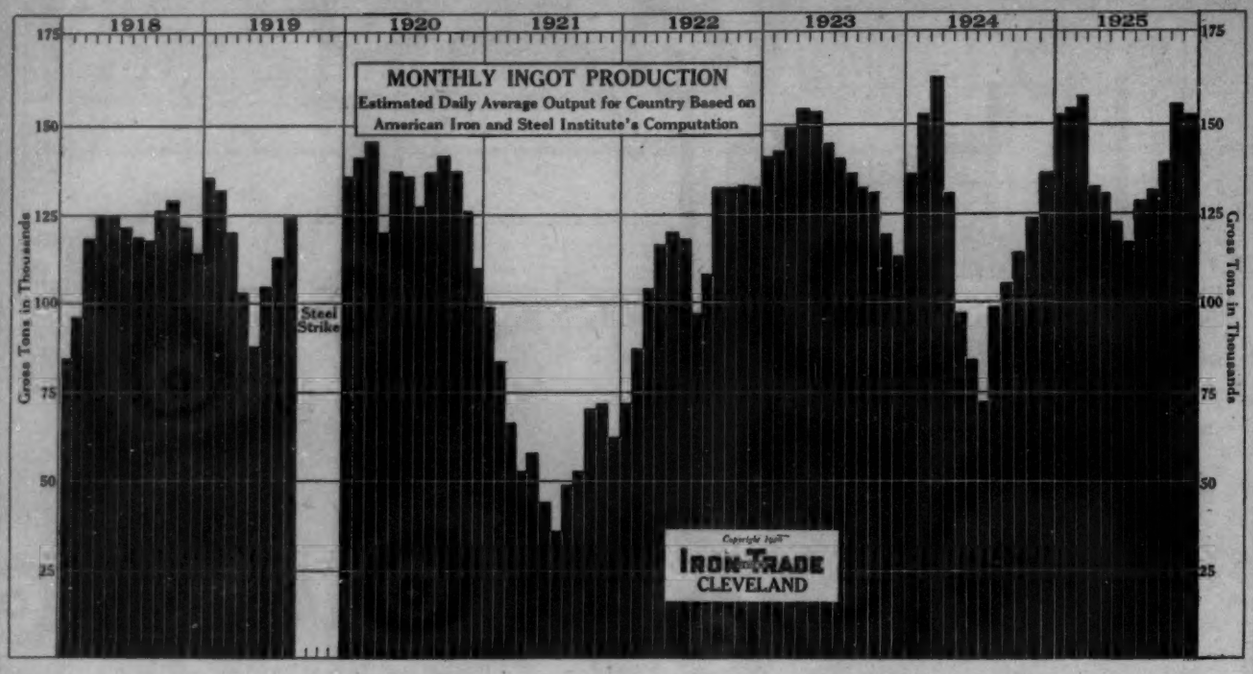
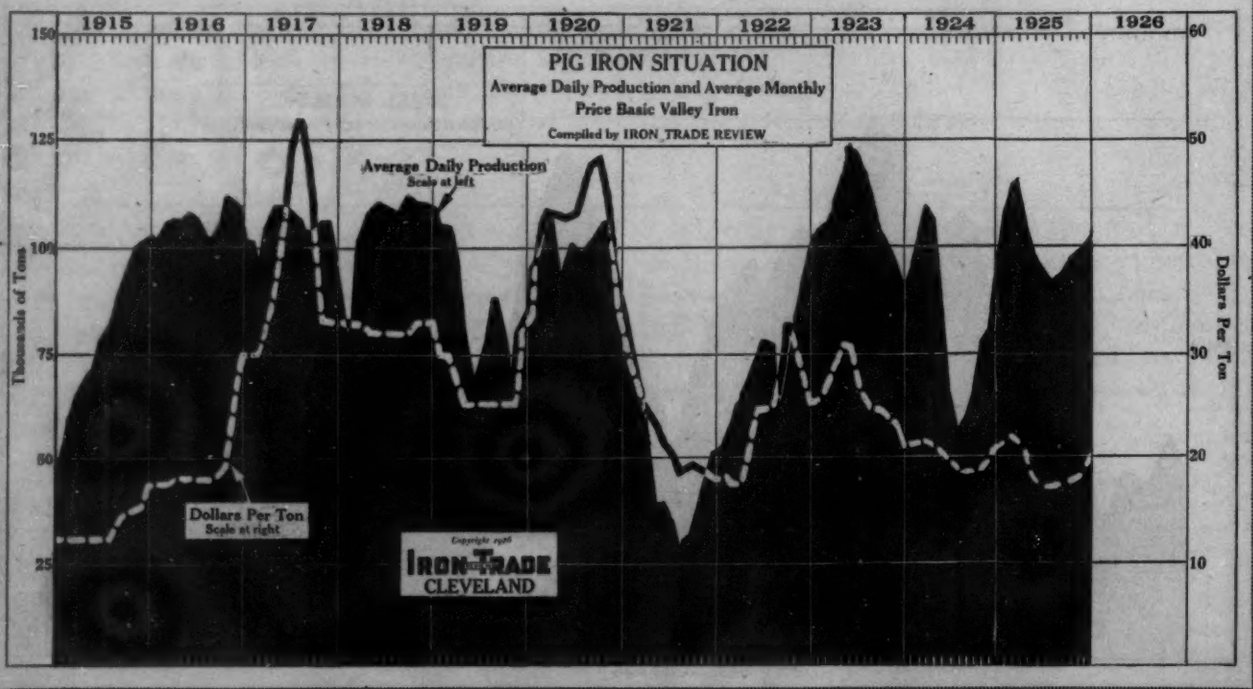


Ingot Production

FINAL reports of ingots production in 1925 confirm earlier estimates that the year's total was record breaking. The aggregate was 44,186,977 tons. This was an increase of 20 per cent over the total of 36,811,157 tons produced in 1924, while it overtopped the previous record year's total of 43,619,000 tons in 1917, by 1.4 per cent. The daily average production for December declined to 152,916 tons from 156,294 tons in November. It exceeded the 137,279 tons of December, 1924.

Pig Iron Situation

NINETEEN twenty five brought an increase in the production of pig iron over 1924 of nearly 16 per cent. Aggregate output, however, fell below the peak reached in 1923. The year's total was 36,382,000 tons, against 31,076,572 tons in 1924 and 40,025,850 tons in 1923. Production in December was at the daily average rate of 105,203 tons, the highest since last April. It compares with 100,775 tons in November and with 95,367 tons reported for December, 1924.



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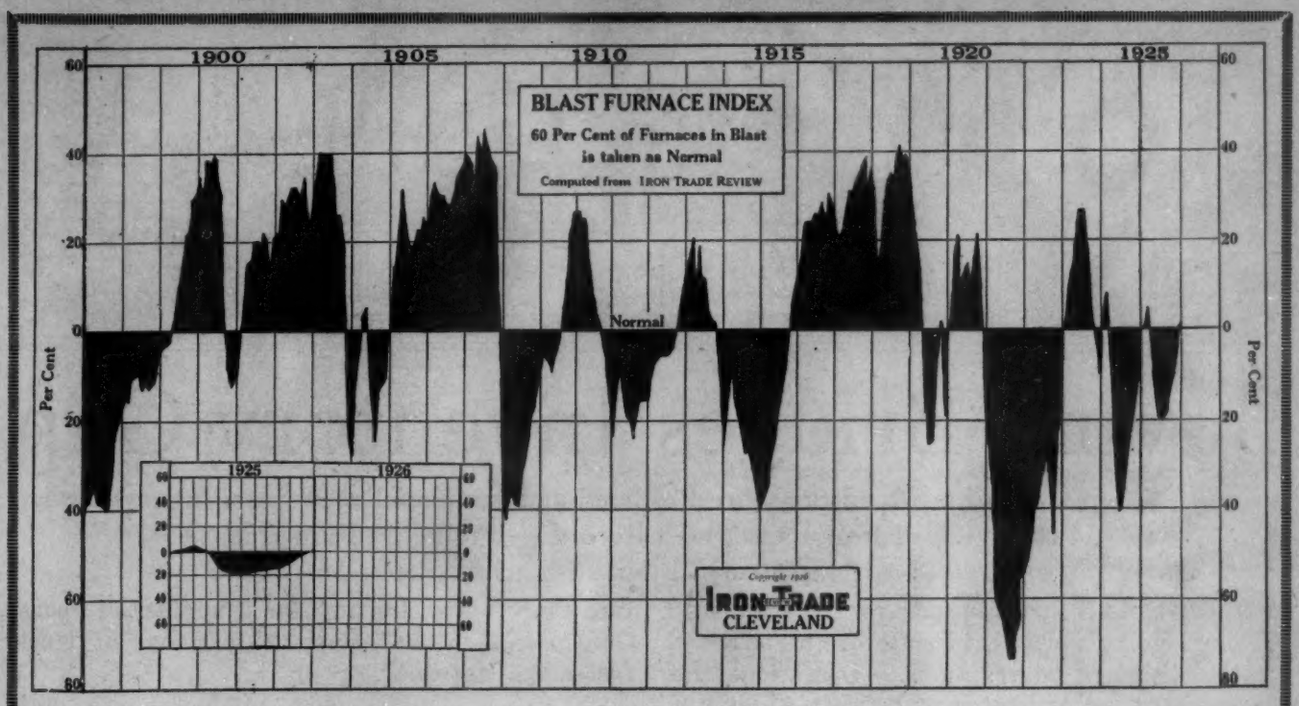
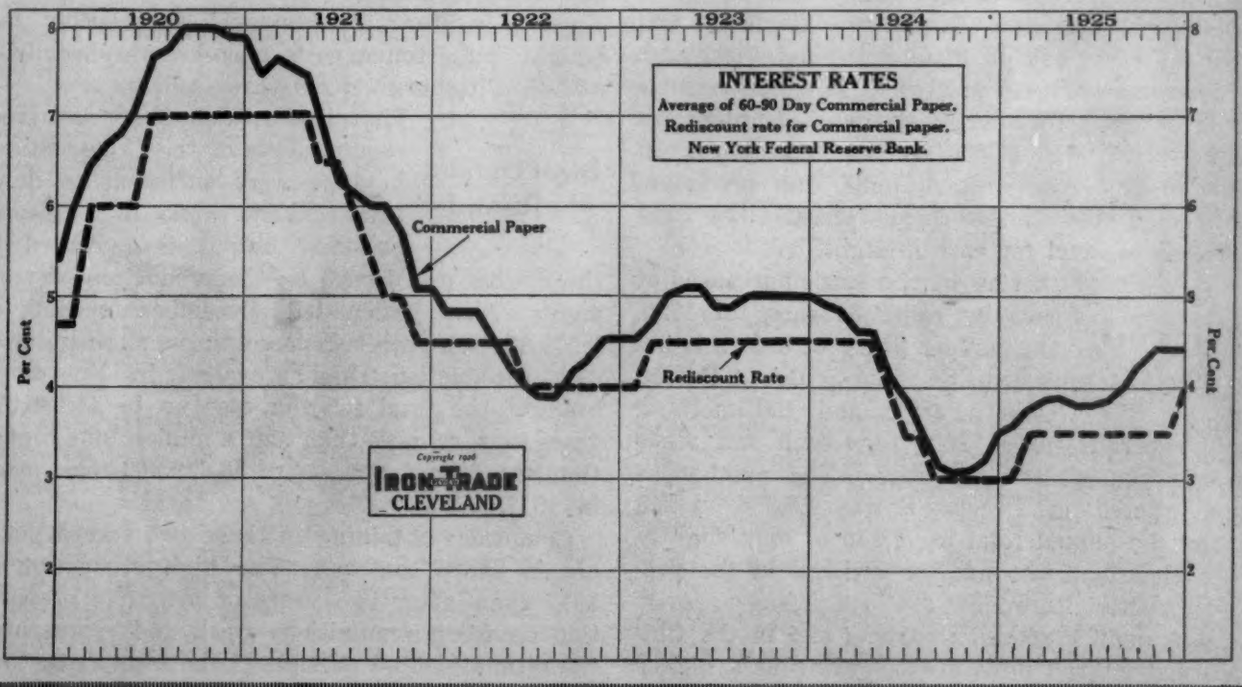


Blast Furnace Index

FOR the first time since last March the Blast Furnace Index reached normal and crossed over the line at the close of December. The month brought an increase of 13 furnaces in blast. The total number active at the turn of the year was 233. This was 60.5 per cent of all the 385 furnaces in the country. Since 60 per cent represents normal for the index, the curve is now 0.8 per cent above normal. General business expansion is reflected, and continued activity is indicated for some months to come.

Interest Rates

AFTER weeks of expected action the directors of the federal reserve bank of New York have advanced the bank's rediscount rate from 3½ per cent to 4 per cent. The lower rate has been in effect since Feb. 27, 1925. The increase completed the chain of events which indicates that the era of extremely cheap money had passed. However, credit supplies are yet too abundant to hint stingency. The advance of the New York rate brings it in line with other federal reserve bank rates.



Buying Bridges Inventory Gap

Specifications and Operations Are Resumed at December Rate—Steel Ingot Production in 1925 Exceeds All Records—Buying by Railroads Is Bright Spot in Finished Steel Market

IN GENERAL specifications for finished steel are holding up well, in spite of the effect of the holiday interruptions. Operations for the industry are estimated at between 85 and 90 per cent of ingot making capacity. In certain quarters, particularly in Chicago, no noticeable break in the brisk volume of business and specifications has occurred, while in other localities, for instance in the valley and in Cleveland, operations have been curtailed, due to what is called a "dead spot" in the market. Pittsburgh district steelworks continue at about 90 per cent of ingot capacity.

Steel bars continue as one of the outstanding favorable items in the finished steel market. Orders are increasing in volume and deliveries are tightening. Prices are firm at 2.00c, Pittsburgh, and 2.10c has been obtained for favorable tonnage. Steel plates are being sold at 1.80c, Pittsburgh, and less in eastern territory and 1.85c to 1.90c out of Pittsburgh and Cleveland. While some business in structural shapes still is going at 1.90c, Pittsburgh, the bulk of orders are at 2.00c. About 15,000 tons of plates for oil tankage is before western mills, and producers of finished steel in the Chicago district see 200,000 tons of steel for cars in sight.

Roads Are Buying

In view of the small purchases of cars by railroads early in 1925, the current flurry of orders is not surprising. The Southern Pacific, Union Pacific and Baltimore & Ohio railroads placed 2000 cars each and other awards aggregated 1500 cars. The number of cars ordered in December was 16,885, which brings the annual total to 77,110 or only slightly more than half the number ordered in the previous year. Railroads are specifying heavily against their 1926 rail contracts and in the Chicago district rail mills are operating at a higher rate than in any January for a number of years. One interest booked about 25,000 tons of track fastenings last week.

Test Sheet Situation

While most producers are optimistic over the sheet market, due to an encouraging resumption of specifications and the receipt of attractive tonnages from the automobile industry, a temporary halt has been called by a few makers in the valley. Operations have been reduced from 94 to 84 per cent and more mills will be down before the week is over. The curtailment has the earmarks of a protest against taking business at unprofitable prices. Concurrently, additional complications in the sheet bar situation have arisen. The northern Ohio mill that recently booked open-hearth sheet bars on a basis of $38, Pittsburgh, has not taken any additional tonnage at that figure. In the meantime, a western Pennsylvania sheetmaker has bought round tonnages of open-hearth sheet bars at $36, Pittsburgh, from three sellers.

Ingot Output Is Record

That the normal, every-day steel requirements of the United States in 1925 were sufficient to drive furnaces and mills to a record-breaking output is indicated in the figures just issued on the production of steel ingots. The calculated December output of 3,975,824 tons, while representing a slightly lower daily production than prevailed in November, brought the total for the year up to 44,186,977 gross tons, or more than half a million tons higher than the previous record of 43,619,200 tons, made in 1917.

Conditions obtaining in these two record years are in sharp contrast. The high production in 1917 came after two years of intensive preparation on foreign munitions work and represented the ultimate effort possible in the face of wartime

pressure. On the other hand, the record-breaking production in 1925 was the result of only a steady, natural consumption, in which no elements of artificial demand or emergency needs were present. It clearly indicates the tremendous normal consuming capacity of the country.

IRON TRADE REVIEW composite of 14 leading iron and steel products stands unchanged at $39.26, slight changes in a number of prices cancelling each other. The present figure compares with $41.05 for the corresponding week in 1925.

Prices, Present and Past

Representative Market Figures for This Week, Last Month, Three Months and One Year Ago

	Jan. 13,— 1926	Dec. 1925	Oct. 1925	Jan. 1925
PIG IRON				
Bessemer, valley, del., Pittsburgh	$22.76	22.76	21.46	24.56
Basic, valley	20.00	20.00	18.70	21.80
Basic, eastern del., eastern Pa.	23.00	23.00	20.50	24.25
*No. 2 foundry, del., Pittsburgh	22.26	22.26	20.96	23.91
No. 2 foundry, Chicago	23.00	23.00	21.60	23.80
*Southern, No. 2, Birmingham	23.00	21.60	19.50	20.00
*Southern Ohio, No. 2 Ironton	21.50	21.10	19.60	22.00
**No. 2X, Virginia furnace	24.00	23.30	23.00	24.50
**No. 2X, eastern, del. Phila.	23.76	24.26	22.61	25.61
Malleable, valley	20.50	20.50	19.20	22.20
Malleable, Chicago	23.00	23.00	21.60	23.80
Lake Superior charcoal, Chicago	29.04	29.04	29.04	29.04
Gray forge, val., del. Pittsburgh	21.76	21.76	20.46	23.66
Ferromanganese, del., Pittsburgh	119.79	119.79	119.79	119.79
*1.75 to 2.25 silicon. **2.25 to 2.75 silicon.				
COKE				
Connellsville furnace, ovens	5.00	4.00	5.65	4.10
Connellsville foundry, ovens	6.00	5.10	5.95	5.10
SEMIFINISHED MATERIAL				
Sheet bars, open-hearth, Youngstown	37.00	36.60	35.00	39.20
Sheet bars, open-hearth, Pittsburgh	37.00	36.60	35.00	39.20
Billets, open-hearth, Pittsburgh	36.00	35.20	35.00	37.80
Wire rods, Pittsburgh	45.00	45.40	45.00	48.00
FINISHED MATERIAL				
Steel bars, Pittsburgh	2.00	2.00	2.00	2.10
Steel bars, Chicago	2.10	2.10	2.10	2.10
Steel bars, Philadelphia	2.32	2.32	2.27	2.32
Iron bars, Philadelphia	2.22	2.22	2.12	2.28
Iron bars, Chicago, mill	2.00	2.00	1.90	2.00
Beams, Pittsburgh	1.90	1.95	1.90	2.10
Beams, Philadelphia	2.17	2.17	2.17	2.32
Beams, Chicago	2.10	2.10	2.10	2.20
Tank plates, Pittsburgh	1.90	1.90	1.80	2.00
Tank plates, Philadelphia	2.12	2.07	2.02	2.32
Tank plates, Chicago	2.10	2.10	2.10	2.20
Sheets, black, No. 28, Pittsburgh	3.35	3.35	3.10	3.55
Sheets, blue anl., No. 10, Pittsburgh	2.50	2.50	2.25	2.70
Sheets, galvanized, No. 28, Pittsburgh	4.60	4.60	4.25	4.75
Sheets, black, No. 28, Chicago	3.50	3.50	3.35	3.75
Sheets, blue anl. No. 10, Chicago	2.65	2.65	2.45	2.85
Sheets, galvanized, No. 28, Chicago	4.75	4.75	4.45	4.90
Wire nails, Pittsburgh	2.65	2.65	2.65	2.85
Wire nails, Chicago	2.70	2.70	2.70	3.00
Tin plate per base box, Pittsburgh	$5.50	5.50	5.50	5.50
OLD MATERIAL				
Heavy melting steel, Pittsburgh	19.00	19.00	18.40	22.10
Heavy melting steel, eastern Pa.	18.00	17.65	17.00	20.00
Heavy melting steel, Chicago	15.25	15.50	16.25	19.45
No. 1 wrought, eastern Pa.	18.75	18.75	18.75	21.50
No. 1 wrought, Chicago	15.00	15.40	16.30	19.15
Rails for rolling, Chicago	17.75	18.55	18.55	20.95

Composite Market Average

The Fourteen Leading Iron and Steel Products Included are Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural Shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe

This week (Jan. 13, 1926)	**$39.26**
Last week (Jan. 6, 1926)	**39.26**
One month ago (December, 1925)	**39.14**
Three months ago (October, 1925)	**37.61**
One year ago (January, 1925)	**41.02**
Ten years ago (January, 1916)	**33.66**
Twelve years ago (January, 1914)	**23.03**

Late News Flashes

Southern Pacific Buys 2000 Cars

New York, Jan. 12.—Southern Pacific railroad is reported to have awarded 2000 freight cars, the allocation not having been released as yet. British railway equipment builders have just received a contract from the South African railways to construct 100 to 200 bogie wagons and 50 to 70 hopper cars.

British Foundry Equipment Men Combine

New York, Jan. 12.—Consolidation of important British foundry equipment manufacturers has just been effected with the purchase of Thwaites Bros., Ltd., Bradford, England, by the Pneulec Machine Co., Ltd., Southwick, near Birmingham, England. The entire business will be concentrated at Smethwick.

Anthracite Conference Adjourned

New York, Jan. 12.—After three weeks in session, the conference attempting to settle the anthracite miners' strike now in its fifth month was adjourned here at noon today without any agreement having been reached. The miners throughout the negotiations refused to arbitrate wages while the operators refused all suggestions of fixing wages in relation to profits or the selling price of coal.

Sheet Mill Operations Reduced

Youngstown, O., Jan. 12.—District steelmakers have 85 per cent of physical capacity engaged this week, the same as a week ago. Sheet mill activity has receded from 94 to 84 per cent because of a dead spot in the market. Bar mill schedules of 87 per cent are being maintained. Strip mill operation average 90 per cent; tin mills are working full. About 65 per cent of tube mill capacity is engaged while that of skelp is 85 per cent.

Stripmaker Acquires Pittsburgh Company

Cleveland, Jan. 12.—Columbia Steel Co., Elyria, O., and the Forged Steel Wheel Co., Pittsburgh, have combined. Sufficient finishing equipment for all operations in production of hot and cold-rolled strip steel will be installed. Financing has been so negotiated that there will be no public offering of securities. H. M. Naugle, president of the Columbia Steel Co., A. J. Townsend, vice president and general manager, and K. R. Jenson will be in complete charge of the combined properties.

Current Rolled Steel Prices

PRICES, CENTS PER POUND, UNLESS OTHERWISE STATED

Semifinished Material

Prices per gross ton

BILLETS AND BLOOMS

4 x 4-inch base

Pittsburgh, open-hearth	$35.00 to 37.00
Pittsburgh, bessemer	35.00 to 37.00
Youngstown	36.00 to 38.00
Philadelphia	40.30 to 41.30
Chicago	36.00
Forging, Pittsburgh	41.00
Forging, Philadelphia	45.30 to 46.30

SHEET BARS

Pittsburgh	36.00 to 38.00
Youngstown	38.00

SLABS

Pittsburgh	35.00 to 38.00
Youngstown	38.00

WIRE RODS

¼-inch and finer

Pittsburgh	$45.00
Cleveland	45.00
Chicago	47.00

Standard extras, $2.50 per ton over ⅝-inch; $5 for screw stock; $15 for acid wire rods. Carbon extras, $3 for 0.20 to 0.40; $5 for 0.41 to 0.55; $7.50 for 0.56 to 0.75; $10 over 0.75.

SKELP

Grooved skelp, Pittsburgh	1.90c
Universal skelp, Pittsburgh	1.90c
Sheared skelp, Pittsburgh	1.90c

Structural Shapes

Pittsburgh	1.90c to 2.00c
Philadelphia	1.96c to 2.32c
New York	2.14c to 2.34c
Chicago	2.10c
Cleveland	2.09c to 2.19c
Birmingham	2.05c to 2.15c

Steel Plates

Pittsburgh	1.90c to 2.00c
Philadelphia	2.12c
New York	2.14c
Chicago	2.10c
Cleveland	1.99c to 2.09c
Birmingham	2.05c to 2.15c

Iron and Steel Bars

Pittsburgh, soft steel	2.00c to 2.10c
Pittsburgh, cold finishing	2.15c to 2.25c
Pittsburgh, forging quality	2.15c to 2.25c
Philadelphia, soft steel	2.32c to 2.42c
New York, soft steel	2.34c to 2.44c
Chicago, soft steel	2.10c
Cleveland, soft steel	2.19c
Birmingham, soft steel	2.15c to 2.25c
San Francisco, soft steel	2.60c
Pittsburgh, refined iron	3.00c to 4.50c
Pittsburgh, reinforcing billet	2.00c to 2.10c
Youngstown, reinf. billet, base	1.90c to 2.00c
Chicago, rail steel	2.00c
Mill rail steel	1.80c to 1.90c
Philadelphia, common iron	2.22c
New York, common iron	2.24c
Chicago, common iron	2.00c

Hoops, Bands, Strips

Hoops, Pittsburgh, 6 inches and under	2.50c
Bands, Pittsburgh, 6 inches and under	2.50c
Bands, Pittsburgh over 6 in.	2.30c
Hot rolled strip steel, Pittsburgh stamping quality	2.30c to 2.50c
Hot rolled strip steel, Chicago	2.50c to 2.60c
Bands, Chicago, under 6 inches	2.60c
Bands, Chicago, 6 in. and over	2.50c
Cold rolled strip steel, hard coils, 1¼ inches and wider by 0.100-inch and heavier, base, Pittsburgh, Cleveland	3.90c
Worcester, Mass., Chicago	4.05c to 4.15c

Cold Finished Steel

Cold finished steel bars, drawn, or rolled Pittsburgh, Chicago carloads	2.50c
Less carload	2.75c
Steel shafting turned and polished Pittsburgh, Chicago	2.60c

Screw stock base Cleveland $1 higher; and Worcester $3 higher than Pittsburgh and Chicago.

Hot Rolled Alloy Steel

Pittsburgh or Chicago

S. A. E. Series—

2300 (3½ per cent nickel)	4.60c to 4.75c
3100 (Nickel chromium)	3.60c to 3.65c
6100 (Chrome vanadium)	4.40c to 4.50c
6100 (Chrome vanad. sprizg)	3.85c to 4.00c
9250 (Silico-mang. spring)	3.30c to 3.40c

Billets—4 x 4 to 10 x 10, gross ton at net ton bar prices; under 4 x 4 to 2½ x 2½-inch $5 higher. Chicago base $2 higher.

Rails, Track Material

Standard bessemer rails, mill	$43.00
Standard open-h'th rails, mill	43.00
Relaying rails, St. Louis	24.00 to 31.00
Relaying rails, Pittsburgh	27.00 to 30.00
Light rails, 25 to 45 mill g.t.	36.00 to 38.00
Angle bars, Chicago base	2.75c
Spikes, railroad, Pittsburgh	2.80c
Spikes, small railroad, 7-16-inch and smaller, Pitts.	3.00c
Spikes, boat and barge, Pitts.	3.25c
Spikes, railroad, Chicago	2.90c to 3.00c
Track bolts, Pitts. standard	3.90c to 4.15c
Track bolts, Chicago	3.90c to 4.15c
Tie plates, Pittsburgh	2.35c
Tie plates, Chicago	2.35c

Wire Products

To Jobbers in Carloads

F.o.b. Cleveland and Pittsburgh base

Wire nails	2.65c
Galv'd nails smaller than 1-inch	4.90c
Galv'd nails, 1-inch and over	4.65c
Plain wire	2.50c
Annealed wire	2.65c
Galvanized wire No. 9 gage	3.10c
Barbed wire, painted	3.10c
Barbed wire, galvanized	3.35c
Polished staples	3.10c
Galvanized staples	3.35c
Coated nails, count keg	1.85c
Woven wire fencing (retailers) 12½ gage, 26-in. high 7-in. bars and 12-in. stays, per 100 rods, f.o.b. Pitts.	$20.03

Joliet, DeKalb and Waukegan Ill., and Anderson, Ind., prices $1 per ton over Cleveland-Pittsburgh base on products made there; Chicago $1 higher; Duluth $2 higher and Worcester, Mass., and Fairfield, Ala., $3 higher.

Sheets

SHEET MILL BLACK

No. 28. Pittsburgh base	3.35c
No. 28. Philadelphia, delivered	3.67c
No. 28. Gary, Indiana Harbor	3.45c
No. 28. Chicago delivered	3.50c

TIN MILL, BLACK

No. 28. Pittsburgh	3.35c
No. 28. Gary base	3.45c

GALVANIZED

No. 28. Pittsburgh base	4.60c
No. 28. Philadelphia, delivered	4.92c
No. 28. Gary, Indiana Harbor	4.70c
No. 28. Chicago, delivered	4.75c

BLUE ANNEALED

No. 10. Pittsburgh base	2.50c
No. 10. Philadelphia, delivered	2.82c
No. 10. Gary, Indiana Harbor	2.60c
No. 10. Chicago, delivered	2.65c

AUTOMOBILE SHEETS

No. 22. Pittsburgh base	4.50c

Tin and Terne Plate

Prices per 100-pound box, Pittsburgh

Tin plate, coke base	$5.50

Gary, Ind. base 10 cents higher.

Long ternes, base	4.85

Iron and Steel Pipe

Base Discounts Pittsburgh and Lorain, O. to Jobbers in Carloads

	Black	Galv.
1 to 3-inch butt steel	62	50½
1 to 1½-inch butt iron	30	13

Indiana Harbor, Ind., and Evanston, Ill., 2 points less and $4 per ton higher. Chicago delivered 2½ points less and $5 per ton higher.

Boiler Tubes

Less Carload Discounts—Carloads 4 Points Additional—F.o.b. Pittsburgh Mills

Steel 3¼ to 3¾-inch	38½
Charcoal iron, 3¼ to 4½-inch	5
Seamless hot rolled, 3¼ to 3½-inch	46 off

Chain, Piling, Cut Nails

Chain, 1-in. proof coil, Pitts.	6.00c
Sheet piling base, Pittsburgh	2.25c to 2.30c
Cut nails, c. l., f.o.b. mills	2.80c

Cast Iron Water Pipe

Prices per net ton

Class B Pipe

Four-inch, Chicago	$52.20 to 54.20
Six-inch and over, Chicago	48.20 to 50.20
Four-inch, Birmingham	46.00 to 47.00
Six-inch and over, Birmingham	42.00 to 43.00
Four-inch, New York	56.50 to 57.60
Six-inch and over, New York	51.50 to 52.60

Standard fittings, Birmingham base $110.00, 6 to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $20; 3-inch, plus $20; gas pipe fittings, 5 higher.

Class A pipe is $5 higher than Class B

Nuts and Bolts

F.o.b. basing points, Pittsburgh, Cleveland, Birmingham and Chicago.

Hot pressed square tapped or blank	$4.00 off list
Hot pressed hexagon tapped or blank	$4.40 off list
Cold punched square or hexagon blank	$4.10 off list
Cold punched square or hexagon tapped or blank	$4.10 off list
Cold punched U. S. S. semifinished hexagon nuts ⅝-inch and larger	75, 10 and 5 off
Cold punched U. S. S. semifinished hexagon nuts 9/16-inch and smaller	80, 10 and 5 off
Cold finished S. A. E. semifinished ⅝-inch and larger	75, 10, 10 and 5 off
Cold finished S. A. E. semifinished 9/16-inch and smaller	80, 10, 10 and 5 off

CARRIAGE BOLTS

(⅜ x 6-inch, smaller and shorter)

Rolled thread	50, 10 and 10 off
Cut thread (all sizes)	50 and 10 off
Eagle carriage bolts (Eagle list)	65 and 10 off

MACHINE BOLTS

(⅜ x 4-inch, hot pressed nuts)

Rolled thread	60 and 10 off
Cut thread (all sizes)	50, 10 and 10 off

(All sizes cold punched nuts)

Cut thread	45, 10 and 5 off
Lag screws	60, 10 and 10 off
Plow bolts Nos. 3 and 7 heads	50 and 10 off
All other standard heads	50 and 10 off plus 20 per cent
Tap bolts	30 off
Bolt ends with hot pressed nuts	50, 10 and 10 off
Bold ends with cold punched nuts	45, 10 and 5 off
Blank bolts	50, 10 and 10 off
Rough stud bolts with nuts (250 pieces or more of a size)	40 and 10 off
Stove bolts, 80, 10 and 5 off plus 2½ off in bulk.	
Tire bolts	60 and 5 off

SEMIFINISHED CASTELLATED AND SLOTTED NUTS

Per 1000, f.o.b. producer's plant, freight allowed

	S.A.E. Castellated	U.S.S. Slotted
¼	$ 4.40	$ 4.40
5/16	5.15	5.15
⅜	6.20	6.60
7/16	7.90	9.00
½	10.10	10.50
9/16	13.80	14.20
⅝	17.00	17.30
¾	23.50	24.00
⅞	36.00	36.00
1	55.50	58.00
1¼	89.00	89.00
1½	126.00	131.00
1¾	183.50	183.50
1½	210.00	210.00

Larger sizes—Prices on application

HEXAGON CAP SCREWS

Milled	80 and 10 off
Upset	80, 10 and 10 off

SQUARE HEAD SET SCREWS

Milled	80 and 5 off
Upset	80, 10 and 5 off

Rivets

Structural rivets, carloads, Pittsburgh and Cleveland	2.60c
Structural rivets, carloads, Chicago	2.75c
**Rivets, 7/16-in. and smaller Pittsburgh, Cleveland	70 and 10 off
**Rivets, 7/16 in. and smaller Chicago	70, 10 and 5 off

**Some makers quoting 70 off with freight allowed on 300 pounds or more.

Washers

Wrought c.l., Chicago dist.	$6.30 to 6.40 off
Wrought c.l., Pitts. dist.	6.25 off
Lock Washers, f.o.b. factory	85 off

Pig Iron

Inquiries for Second Quarter Appearing—Spot Market Quiet—Easier Tone Noted in Some Districts

HEAVY buying for the first quarter, as reported in November and December, is responsible for the pause in the pig iron market at present, while shipments continue in large volume and some furnaces are behind on deliveries. Inquiries have begun to appear for the second quarter, and while negotiations are in progress on several sizable lots, buyers in general are not yet ready to take the next step, either for rounding out first quarter needs or committing themselves for the second. Prices in eastern territory are reported easier. Following the sale of 1000 tons of malleable at below $21, Ironton, by one maker, another southern Ohio interest is quoting $21, base, Ironton, for second quarter. Elsewhere prices are firm.

PITTSBURGH, Jan. 12.—Were it not for heavy pig iron shipments the market practically would be devoid of activity. Customers are taking all the iron due them and asking that shipments be hurried. Most furnaces are behind on deliveries, finding it difficult to accommodate normal stockpiles. New orders are confined to a few small lots of foundry or bessemer iron. Nothing is noted in basic. Prices levels are unchanged, but apparently firm. Agents of the receivers of the Struthers Furnace Co. are quoting $20.50 as minimum on No. 2 foundry. The largest inquiry pending this week involves 500 tons of foundry iron.

Boston, Jan. 12.—Spot buying of pig iron is fairly active. A Massachusetts foundry bought several hundred tons of No. 2X iron (2.25 to 2.75 silicon), from a Buffalo furnace at $22, furnace, or $26.91 delivered.

New York, Jan. 12.—Fully 15,000 tons of foundry iron was sold here in the past week. Nearly half was for shipment outside this territory. Prices are easier. Buffalo iron is $21 to $22, base furnace, and eastern Pennsylvania iron is $22.50 to $23, base furnace. Foreign foundry iron is bringing $21 to $22, base, duty paid. Considerable India has been sold at $23, base.

The Robesonia Iron Co. resumed operations at its blast furnace at Robesonia, Pa., Dec. 31.

Philadelphia, Jan. 12.—The pig iron market is quiet. Total sales here in the past week probably were not over 5000 tons. The usual price for eastern Pennsylvania foundry iron is $23, base furnace. Foreign foundry iron is reported selling at $21.50 to $22, duty paid, tidewater.

Buffalo, Jan. 12.—Inquiry for pig iron continues to be measured in hundreds rather than in thousands of tons. Heavy shipments have been made since Jan. 1 and will continue for at least another 30 days. Some Buffalo merchant interests are asking $22, base, for foundry and malleable, and others are quoting $21 for desirable business for this quarter. One Buffalo maker is quoting $22, base for second quarter.

Cleveland, Jan. 12.—While the market for prompt lots of pig iron, and for third quarter, is quiet, inquiries are developing for the second quarter. One maker has four such inquiries, totaling 2300 tons, for melters in nearby Ohio cities, while another has an inquiry for around 1000 tons from a central Ohio user. Prices being quoted on these, according to sellers, are the same as for the present quarter. Current sales during the week by furnace interests with headquarters here total 7500 tons, in small and medium size lots. Most melters are covered for first quarter; shipments have picked up in satisfactory volume. Prices are unchanged at recently quoted levels; $20.50, valley, being the minimum, while lake furnaces are holding to $23, base, furnace. The only Cleveland furnace in the market is quoting nominally $22, base, on iron for local delivery.

Pig Iron Prices

Prices per gross ton

Bessemer, valley	**$21.00**
Bessemer, Pittsburgh	**22.76**
Basic, valley	**20.00**
Basic, Pittsburgh	**21.76**
Basic, Buffalo	**20.00 to 20.50**
Basic, del., eastern Pa.	**22.75 to 23.75**
Malleable, valley	**20.50**
Malleable, Pittsburgh	**22.26**
Malleable, del., Cleveland	**22.26 to 22.50**
Malleable, Chicago	**23.00**
Malleable, Buffalo	**21.00 to 22.00**
Malleable, del., eastern Pa.	**24.25 to 24.75**
No. 1X, eastern del., Phila.	**24.76 to 25.39**
No. 1X, Buffalo	**22.50 to 23.50**
No. 1 foundry, Chicago	**23.50**
No. 2 foundry, valley	**20.50**
No. 2 foundry, Pittsburgh	**22.26**
No. 2 foundry, Buffalo	**21.00 to 22.00**
No. 2 foundry, Chicago	**23.00**
No. 2 foundry, Granite City	**23.50 to 24.00**
No. 2 foundry, Ironton fur.	**21.00 to 21.50**
No. 2 foundry, del., Cleveland	**22.26 to 22.50**
No. 2 foundry, del., Phila.	**23.76 to 24.39**
No. 2 foundry, N. J., tidewater	**23.89 to 24.76**
No. 2X, eastern del., Phila.	**24.26 to 24.89**
No. 2X, east. N. J., tidewater	**24.89 to 25.26**
No. 2X, eastern del., Boston	**26.65 to 27.15**
No. 2X, foundry, Buffalo furnace	**21.50 to 22.50**
No. 2X, Buffalo, del., Boston	**26.41 to 26.91**
Continental foundry f.o.b. Boston	**22.00 to 22.50**
India, 2.25 to 2.75 silicon, delivered cars, Boston	**22.50 to 23.00**
No. 2 Alabama, Birmingham	22.00 to 23.00
No. 2, Alabama, Cincinnati	26.69
No. 2 Tenn., Birmingham	22.00
No. 2 Tenn., Cincinnati	25.69
No. 2 southern, Philadelphia	**27.01 to 28.01**
No. 2 southern, Chicago	**27.01 to 28.01**
No. 2 southern, Chicago (barge and rail)	**25.18**
No. 2 southern, Boston (rail and water)	**27.91 to 28.91**
No. 2 southern, Cleveland	**27.01 to 28.01**
No. 2 southern, St. Louis	**25.42 to 26.42**
No. 2X, Virginia, furnace	23.00 to 24.00
No. 2X, Virginia, Phila.	28.17 to 29.17
No. 2X, Virginia, Jersey City	28.54 to 29.54
Gray forge, eastern Pa.	**23.00 to 23.50**
Gray forge, val. del. Pitts.	**21.76**
Low phos., standard, valley	**28.00 to 28.50**
Low phos., standard Phila.	**24.76 to 27.79**
Low phos., Lebanon, furnace	**24.00 to 25.00**
*Low Phos., English	24.01 to 25.01
Charcoal, Birmingham	31.00 to 32.00
Charcoal, Superior, Chicago	**29.04**

Silvery iron Jackson county, Ohio furnace, 5 per cent $26.50; 6 per cent $27.50; 7 per cent $28.50; 8 per cent $29.50; 9 per cent $31.00; 10 per cent $33.00; 11 per cent $35.00; 12 per cent $37.00; 13 per cent $39; and 14 per cent $41.00.

Bessemer ferrosilicon, Jackson county, Ohio, furnace, 10 per cent $35.00; 11 per cent $37.00; 12 per cent $39.00; 13 per cent $41.00; 14 per cent $43.00; 15 per cent $45.50; 16 per cent $48.00; 17 per cent $50.50.

***Duty paid, delivered Philadelphia consumers.**

Cincinnati, Jan. 12.—Willingness of a leading pig iron producing concern in southern Ohio to accept tonnages on the basis of $21 Ironton for second quarter delivery has disturbed the market. The action of the producer followed the purchase of 1000 tons of malleable iron by the Ross-Meehan foundries, Chattanooga, Tenn., under $21, Ironton. The Muncie Malleable Co., Muncie, Ind., is reported to have bought 1000 tons of malleable iron and the Kramer Bros., 500 tons of northern foundry. Sales of southern iron have been small, but the market is firm at $23, Birmingham and $22, Tennessee furnace.

Chicago, Jan. 12.—The northern pig iron market shows a trifle more spot buying and inquiry than in December but is not as active as it is expected to be within a few weeks. The market on No. 2 foundry and malleable is unchanged at $23, Chicago furnace. A Wisconsin implement maker is inquiring for 1500 tons of foundry and 500 tons of silvery iron. Inquiries are out from several Chicago foundries for 500 to 1000 tons each. The St. Paul railroad is inquiring for 2500 tons of malleable for the first half.

St. Louis, Jan. 12.—Interest in pig iron centers in shipments, there being little new demand. Shutdowns for inventory and holidays at a majority of foundries were the shortest in recent years, and since Jan. 1 there has been a steady increase in the melt. Thus far no definite demand has appeared for second quarter iron, though tentative inquiries have been made. One southern producer has offered a small tonnage of off iron at 50 cents under the base price. Prices generally hold firm at the recent levels. No. 2 southern is $22 to $23, Birmingham, and northern iron of the same grade is $23 Chicago.

Birmingham, Ala., Jan. 11.—The southern pig iron market is strong at $22 to $23, base, though sales are light.

The Market Section

Coke

Market Strong and Active—Furnace Customers Given Lower Price Than Casual Buyers

DEMAND for coke as a substitute for anthracite coal continues heavy as negotiations for the settlement of the strike are protracted. In the Connellsville region two sets of prices prevail, makers supply regular customers with furnace fuel at $5 to $5.75, while selling at $6 to $6.50 in the open market. Crushed coke has advanced to $9 to $9.50.

Pittsburgh, Jan. 12.—Bolstered by continuous yet conservative demands from the East the beehive coke market again is advancing. Because of the possibility of a settlement of the anthracite strike, buyers are pursuing a different policy than in October and November. They are ordering only ten to 25 carloads at a time, whereas previously some bought 5000 tons or more weekly. Two sets of prices are in force for standard furnace coke, one for regular customers' filling in purposes, $5 to $5.75; another for strangers, $6 to $6.50. Several makers maintaining those minimums are reluctant to accept orders for the reason they can break or crush their output, obtaining $9 for broken and $9.50 to $10 for crushed and sized. One blast furnace bought ten carloads Saturday at $5. The last contracts noted were those placed by the Rogers, Brown Iron Co., at $4.75 and the American Radiator Co., about two weeks ago. Regular foundry coke customers are buying small lots at $6 to $6.50. Some makers are quoting and obtaining $7 to $7.50, although disinclined to make much foundry coke owing to heavy demand for crushed.

Production of coke in the Connellsville region for the week ended Jan. 2 was 221,000 tons, compared with 191,090 tons the preceding week, according to the *Connellsville Courier*.

Cincinnati, Jan. 12.—Demand for foundry coke is slow. The movement of furnace fuel has been increased by the blowing in of an additional furnace by the American Rolling Mill Co., at Ashland, Ky.

St. Louis, Jan. 12.—Demand for all grades of coke is brisk, a gradual increase in the melt at mills and foundries is reflected in a stronger call for metallurgical coke. Local by-product plants report December shipments slightly under the record November total, but the largest ever made for any December. Considerable southern coke is moving into this district.

Birmingham, Ala., Jan. 11.—Delivery of coke is being urged by consumers, and production is steady. New business is reported, and inquiries indicate demand will continue for some time.

New York, Jan. 12.—Foundries are paying $5.75 to $6.25, Connellsville, for spot foundry coke. Foundry and furnace coke for domestic heating purposes is bringing $6.50 to $7. By-product foundry coke is unchanged.

Coke Prices

Beehive, Ovens

Prices per net ton	
Connellsville, furnace	$5.00 to 6.50
Connellsville, foundry	$6.00 to 7.50
New River foundry	7.50 to 8.00
New River furnace	6.25
Wise county furnace	6.00
Wise county foundry	7.00
Alabama foundry	5.75 to 6.50
Alabama furnace	5.50

By-Product

Foundry, Newark, N. J.; del.	$11.01 to 11.52
Foundry, Chicago, ovens	10.50
Foundry, New England, del.	13.00
Foundry, St. Louis	10.00
Foundry, Granite City, Ill.	10.00
Foundry, Birmingham	5.75 to 6.00
Foundry, Indianapolis, del.	11.25

Refractories

Pittsburgh, Jan. 12.—Conditions are gradually bettering in refractories from a tonnage standpoint. Interruptions due to the holidays were minimized and plants maintained schedules on an 85 to 90 per cent average basis where they are at present. Some larger users have contracted for first half; others merely for the quarter and these keep up a good specifying rate. An order is about to be placed with a leading maker here for about 2,000,000 brick for the 51 by-product coke ovens of the Wheeling Steel Corp. It is understood also that the larger requirement for the Weirton Steel Co., is practically on the books. One important maker of chrome brick reports that 1925 shipments were 50 per cent greater than any previous year of its history. Quoted levels are firm.

Foreign Fluorspar Down

New York, Jan. 8.—Lower prices are being offered on foreign fluorspar. German 85 and 5 per cent material now is being offered at $17.50 per net ton, duty paid, but the market is not yet clearly defined. Recent business includes some sales of material containing 90 to 95 calcium fluoride and up to 3 per cent silica, around $25 per net ton, duty paid. This material comes from Germany and was sold to glass manufacturers.

High grade fluorspar from the Far East has been purchased by hydrofluoric acid manufacturers at prices said to range from $30 to $35, duty paid per net ton. One lot of this material with a guarantee of 96 per cent minimum calcium fluoride and less than half of one per cent silica brought $30.

Ferroalloys

Ferromanganese Buying Slow—Spiegel Shipments Heavy

New York, Jan. 12.—The Ferromanganese buying movement still is delayed, but consumption is good. Spiegeleisen deliveries are heavy.

Wolframite, tungsten ore, is strong, prices asked now being $12.50 a short ton unit and up. Strength appears to originate largely in Europe, partly on speculation, as not much new business is reported here. Ferrotungsten has sold lately at $1.14 and $1.15. Other alloys are firm but unchanged.

Pittsburgh, Jan. 12.—New buying of ferromanganese and specifications are confined to small lots. Some large users are under contract for the first quarter or first half. Several have contracts expiring this month or next. The market is firm at $115, seaboard base. Quoted levels are unchanged and firm. Activity in low grade ferrosilicon since the first of the year has revolved about single carload orders. One seller booked four, and now is negotiating on 300 tons additional. Shipments against 50 per cent ferrosilicon contracts are numerous.

Cincinnati, Jan. 12.—The Andrews Steel Co., Newport, Ky., is in the market for 300 to 600 tons of ferromanganese.

Chicago, Jan. 12.—Ferromanganese users are disposed to look for an easier market. While rumors have been heard of a price less than $115, seaboard, in other districts all sellers claim to be holding to that level here. Inquiry for ferromanganese is slightly better. The spiegeleisen market is tight and orders for prompt shipment are hard to place. The minimum on desirable business is $33, domestic furnace.

Ferroalloy Prices

†Ferromanganese 78 to 82 per cent, tidewater, or furnace first hand and resale	$115.00
Ferromanganese delivered Pittsburgh	119.79
Spiegeleisen 19 to 21 per cent domestic furnace or tidewater	34.00
Ferrosilicon, 50 per cent contract freight allowed	85.00
Ferrotungsten standard, per pound contained	1.14 to 1.16
Ferrochrome, 60 to 70 chromium, 6 to 8 carbon, cents per pound contained, delivered	11.00 to 11.50
Ferrovanadium, 30 to 40 per cent per pound estmiated, according to analysis	3.25 to 4.00
Ferro-carbon-titanium, car lots, producer's plant, net ton	200.00
Ferrophosphorus, electrolytic, per ton, carload, 17 to 19 per cent, Rockdale, Tenn., basis (18 per cent material)	91.00
Ferrophosphorus, electrolytic, per ton, carload, 23 to 25 per cent, f.o.b. Anniston, Ala., (24 per cent material)	122.50

†Duty paid

Plates

Market Is Easier—Large Tonnages Involved in Pending Car and Tank Business

PLATE prices are easier, prices below 1.80c, Pittsburgh, being quoted in nearby territory, although some mills are holding to 1.90c. The market is moderately active. Inquiry for oil tankage at Chicago involves 12,000 to 15,000 tons, and fully 200,000 tons of steel, mainly plates, are needed for prospective car orders. Two naval vessels will require 8000 tons of plates and shapes.

PLATE PRICES, PAGE 156

Chicago, Jan. 12.—Fully 200,000 tons of heavy finished steel, chiefly plates, is in prospect in western railroad car orders. Current oil tankage inquiry approximates 12,000 to 15,000 tons. Plate deliveries have backed up to nearly 45 days, with shipments on small size plates almost as deferred as those on bars. Plates are quoted at 2.10c, Chicago.

Boston, Jan. 12.—Plates have advanced at Boston from 1.70c to 1.80c, Pittsburgh. Eastern mills are well booked, and while buying in New England is quiet at present, a good tonnage is in prospect.

Philadelphia, Jan. 12.—Eastern plate mills are scheduled four to five weeks ahead, having difficulty in shipping as needed. The market seems firm at 1.80c, Pittsburgh.

Pittsburgh, Jan. 12.—Unoccupied plate capacity in eastern Pennsylvania still is responsible for some of the prices appearing in different districts below 1.90c, Pittsburgh. Prices below 1.80c, Pittsburgh, have appeared in the Bradford, Pa. territory. The largest order placed here recently is that of the Dravo Contracting Co., Neville Island, Pa., for 5500 tons for barges for the Inland Waterways commission. These, it is understood, will be rolled by the leading interest. Between 1000 and 1500 tons are involved in 12 barges for use on the New York state barge canal, on which the Midland Barge Co. is low bidder.

Cleveland, Jan. 12.—After a slight recession during the holiday season, consumers of steel plates are again in the market for a moderate volume of tonnage. Little is heard of the 1.80c price which prevailed in December and practically all of the current business is being done at 1.90c, Pittsburgh for large lots and 2.00c, Pittsburgh for smaller orders. The bulk of the business is coming from structural and boiler shops and general manufacturing establishments. The demand for plates for the oil industry and for locomotives is light.

CONTRACTS PLACED

5500 tons, ten barges for the Inland Waterways commission, Washington, to the Dravo Contracting Co., Neville Island, Pa.
1500 tons, ten coal barges for the Equitable Gas Co., Pittsburgh, to the Dravo Contracting Co., Neville Island, Pa.
1000 tons, twelve barges to operate on the New York State barge canal; to Midland Barge Co., Midland, Pa.
1300 tons, 2,000,000 cubic foot gas holder for the Miami Gas Co., Miami, Fla., to the Cruse-Kemper Co., Ambler, Pa.
2400 tons, two ferry boats for the Key System Transit, Oakland, Calif., to Moore Dry Dock Co.
1500 tons, penstock for the San Joaquin Light & Power Co., Fresno, Calif., to Ferrum Co. of Germany who will supply German pipe.
200 tons of riveted pipe still pending.
400 tons, tanks for Shell Oil Co., Martinez, Calif., to Western Pipe & Steel Co.
110 tons, shore pipe for United States Engineers office, San Francisco, to Pacific Coast Engineering Co.

CONTRACTS PENDING

3000 tons, penstock for Feather River Power Co., San Francisco; pending.
8000 tons, shapes and plates, two light battle cruisers for navy department, Washington; specifications issued, bids due March 1.
350 to 500 tons, three barges for the United States engineers, Savannah, Ga.; bids to be opened Jan. 28.
100 tons, standpipe for Gresham, Oreg.; bids Jan. 13.
100 tons, three standpipes for Oswego, Oreg.; bids Jan. 5.
850 tons pipe line, Bend, Oreg.; Steel Tank & Pipe Co. low bidder.
425 tons small tanks, for Pan American Petroleum Corp., Los Angeles. Pending.
200 tons, penstock for San Joaquin Light & Power Co., Fresno, Calif., still pending.
100 tons, standpipes, Gresham, Oreg.; bids in Jan. 19.
300 tons, pipe line, Carmichael, Calif.; bids in Jan. 16.

Semifinished

Sheet Bars Placed at $36, Pittsburgh; Billets and Slabs at $35—New Demand Light

SOME additional sales of sheet bars, billets and slabs were closed during the week at the lower end of the price range, several thousand tons of open-hearth sheet bars having been entered at $36, Pittsburgh. Round lots of slabs and 4 x 4 billets were closed at $35, Pittsburgh. A Cleveland interest has curtailed operations due to lack of specifications.

SEMIFINISHED STEEL PRICES, PAGE 156

Pittsburgh, Jan. 12.—A nearby sheetmaker last week placed orders with at least three different sources for sheet bars and slabs, each involving several thousand tons. The sheet bar portion of the order was placed at $36, Pittsburgh. The buyer obtained that quotation from three sources, one quoting it as an accommodation. This price, however, is disappearing on open-hearth sheet bars and a shortage of that grade is imminent. At least two makers state they are willing to take desirable open-hearth sheet bar tonnage at $36, Pittsburgh, but say that lots of 5000 or 10,000 tons at a time could not be had at that figure. Bessemer sheet bars are easily available at $36, Pittsburgh, in almost any quantity. The slab portion of the above order carried a price of $35, Pittsburgh, and two different lots of 4 x 4-inch rerolling billets, involving fairly large tonnages carried that price. Some mills are asking $36 and even higher. For small billets and slabs $38 is named and on forging billets $41 appears to be the going market. One maker who recently took business at $40 has revised its figure upward and is quoting a $41 level with the other two. Wire rod contracts carry $45 but few are being placed. Skelp is unchanged at 1.90c.

Philadelphia, Jan. 12.—Billet sales in the past week were small. Most consumers in this district have contracted for first quarter. Some will buy hand-to-mouth. Rerollers are $35 to $36, Pittsburgh. Forging billets are $40 to $41, Pittsburgh.

Youngstown, O., Jan. 12.—As a result of a few sheetmakers closing their plants to permit a sufficient quantity of sheet orders to accumulate, the volume of sheet bars coming to makers here in the form of specifications declined during the forepart of this week. No new demand for semifinished material has developed since the opening of the year. Quotations of $35 on standard billets and slabs, and $36, Youngstown, on sheet bars are nominal.

Cleveland, Jan. 12.—The market here for sheet bars, billets and slabs is quiet, with the leading seller quoting nominally $40, Cleveland, Youngstown or Pittsburgh, on the three products. No open market sales have been made since the last reported from this source at $38, Pittsburgh, for sheet bars and slabs. Lack of specifications due to slowing up of consumers' operations during holidays and inventories has caused the McKinney Steel Co. to curtail output, its 14 open hearths being down temporarily.

Chicago, Jan. 12.—No outstanding sales of small billets are reported but $36, base, is the minimum makers say they would quote.

Iron and Steel Scrap Prices

Corrected to Tuesday Noon. Gross Tons Delivered to Consumer

Steel Works Scrap

HEAVY MELTING STEEL

Birmingham	14.00 to 14.50
Boston (dealers)	12.00 to 12.50
Buffalo	18.00 to 18.50
Buffalo, No. 1	19.50
Chicago	15.00 to 15.50
Cincinnati (dealers)	13.50 to 14.00
Cleveland	17.25 to 17.75
Detroit	14.75 to 15.25
Eastern Pennsylvania	18.00 to 18.50
Bethlehem delivery	17.00 to 17.50
New York (dealers)	12.50 to 13.00
Pittsburgh	19.00 to 19.25
St. Louis	15.00 to 15.50
Valleys	18.50 to 18.75

COMPRESSED SHEETS

Buffalo	17.50 to 18.00
Chicago	13.50 to 14.00
Cleveland	15.00 to 15.75
Detroit	12.50 to 13.00
Pittsburgh	18.00 to 18.50
Valleys	17.00 to 17.50

BUNDLED SHEETS

Buffalo	14.00 to 14.50
Cincinnati (dealers)	9.50 to 10.00
Cleveland	12.50 to 12.75
Eastern Pennsylvania	15.00 to 15.50
Pittsburgh	17.00 to 17.50
St. Louis	10.00 to 10.50
Valleys	15.25 to 15.75

SHEET CLIPPINGS, LOOSE

Chicago	9.50 to 10.00
Cincinnati	9.50 to 10.00
Detroit	10.00 to 10.50

STEEL RAILS, SHORT

Birmingham	14.00 to 14.50
Buffalo	18.25 to 18.75
Chicago	19.00 to 19.50
Cincinnati (dealers)	17.00 to 17.50
Cleveland (over 6 ft.)	16.75 to 17.00
Detroit	17.00 to 17.50
St. Louis	18.25 to 18.75

STOVE PLATE

Birmingham	14.00 to 14.50
Boston (consumers)	14.00 to 14.50
Buffalo	15.00 to 15.25
Chicago	16.50 to 17.00
Cincinnati (dealers) (net)	10.00 to 10.50
Cleveland	13.75 to 14.00
Detroit (net tons)	13.25 to 13.75
Eastern Pennsylvania	15.00 to 15.50
New York (dealers)	10.50 to 12.00
Pittsburgh	14.00 to 14.50
St. Louis	15.00 to 15.50

LOW PHOSPHORUS

Buffalo	20.50 to 21.00
Cincinnati (dealers)	18.00 to 18.50
Eastern Pennsylvania	21.00 to 22.00
Pitts. billet and bloom crops	24.00 to 24.50

SHOVELING STEEL

Chicago	15.00 to 15.50
Pittsburgh	15.00 to 15.50
St. Louis	15.00 to 15.50

KNUCKLES, COUPLERS, SPRINGS

Chicago	17.75 to 18.25
Eastern Pennsylvania	20.50 to 21.50
Pittsburgh	22.00 to 22.50
St. Louis	17.00 to 17.50

FROGS, SWITCHES, GUARDS

Chicago (cut)	17.00 to 17.50
Eastern Pennsylvania	17.00 to 17.50
St. Louis	17.25 to 17.75

ANGLE BARS—STEEL

Buffalo	16.50 to 17.00
Chicago	18.25 to 18.75
St. Louis	16.00 to 16.50

Iron Mill Scrap

RAILROAD WROUGHT

Birmingham	13.00 to 13.50
Boston (dealers)	13.50 to 14.00
Buffalo, No. 1	15.75 to 16.25
Buffalo, No. 2	18.00 to 18.50
Chicago, No. 1	15.00 to 15.50
Chicago, No. 2	15.25 to 15.75
Cincinnati, No. 1 (dealers)	10.00 to 10.50
Cleveland, No. 1	13.75 to 14.25
Eastern Pennsylvania	18.50 to 19.00
New York, No. 1 (dealers)	15.75 to 16.25
Pittsburgh, No. 1	15.50 to 16.00
Pittsburgh, No. 2	19.00 to 19.25
St. Louis, No. 1	13.75 to 14.25
St. Louis, No. 2	14.50 to 16.00

WROUGHT PIPE

Boston (dealers)	11.50 to 12.00
Buffalo	15.00 to 15.50
Eastern Pennsylvania	16.50 to 17.00
New York (dealers)	12.50 to 12.75

YARD WROUGHT

Boston	12.00 to 12.50
Eastern Pennsylvania	17.00 to 17.50

BUSHELING

Buffalo	17.50 to 18.00
Chicago, No. 1	13.50 to 14.00
Chicago, No. 2	9.50 to 10.00
Cincinnati, No. 1 (dealers)	10.50 to 11.00
Cleveland, No. 1	14.50 to 14.75
Cleveland, No. 2	14.00 to 14.25
Eastern Pennsylvania	14.00 to 15.00
Pittsburgh, No. 1	16.00 to 16.50
St. Louis, No. 1	13.00 to 13.50

MACHINE SHOP TURNINGS

Birmingham	8.00 to 9.00
Boston (chemical)	9.50 to 10.00
Buffalo	13.50 to 14.00
Chicago	10.00 to 10.50
Cincinnati (dealers)	9.50 to 10.00
Cleveland	14.25 to 14.50
Detroit	10.50 to 11.00
Eastern Pennsylvania	15.00
New York (dealers)	11.00 to 11.50
Pittsburgh	14.50 to 15.00
St. Louis	8.75 to 9.25
Valleys	12.50 to 13.00

CAST IRON BORINGS

Birmingham (chemical)	15.00 to 16.00
Birmingham (plain)	8.00 to 9.00
Boston (chemical)	11.50 to 12.00
Boston (dealers)	9.50 to 10.00
Buffalo	14.00 to 14.50
Chicago	13.50 to 13.75
Cincinnati (dealers)	10.00 to 10.50
Cleveland	14.25 to 14.75
Detroit	11.00 to 11.50
Eastern Pennsylvania	15.00
Eastern Pennsylvania (chem.)	17.00 to 17.50
New York (dealers)	10.75 to 11.25
Pittsburgh	15.00 to 15.50
St. Louis	12.00 to 12.50
Valleys	13.50 to 13.75

MIXED BORINGS AND TURNINGS
For blast furnace use

Boston (dealers)	9.50 to 10.00
Buffalo	14.00 to 14.50
Cincinnati (dealers)	9.50 to 10.00
Cleveland	14.25 to 14.75
Detroit	11.25 to 11.75
Eastern Pennsylvania	14.00 to 14.50
New York (dealers)	10.75 to 11.25
Pittsburgh	15.00 to 15.50

PIPES AND FLUES

Chicago	12.75 to 13.25
Cincinnati (dealers)	8.50 to 9.00
Cleveland	12.25 to 12.50
St. Louis	12.00 to 12.50

RAILROAD GRATE BARS

Buffalo	14.50 to 14.75
Chicago	15.25 to 15.75
Cleveland	13.75 to 14.00
Eastern Pennsylvania	15.00 to 15.50
New York (dealers)	12.00 to 12.50
St. Louis	13.50 to 14.00

FORGE FLASHINGS

Boston (dealers)	10.00 to 10.50
Buffalo	14.50 to 15.00
Chicago	10.00 to 10.50
Cleveland (under 10 in.)	14.25 to 14.50
Cleveland (over 10 in.)	14.25 to 14.50
Detroit	10.75 to 11.25
Pittsburgh	16.00 to 16.50

FORGE SCRAP

Boston (dealers)	10.00 to 10.50
Chicago	18.50 to 19.00
Eastern Pennsylvania	15.25 to 15.75

ARCH BARS AND TRANSOMS

Chicago	23.50 to 24.00
St. Louis	21.50 to 22.00

Iron and Steel Works Scrap

AXLE TURNINGS

Boston (dealers)	10.00 to 10.50
Buffalo	15.00 to 15.50
Chicago	14.50 to 15.00
Cleveland	14.50 to 15.00
Eastern Pennsylvania	15.50 to 16.00
Pittsburgh	17.50 to 18.00
St. Louis	12.25 to 12.75

STEEL CAR AXLES

Birmingham	18.00 to 20.00
Boston (shipping point)	18.00 to 19.00
Buffalo	20.00 to 20.50
Chicago	19.25 to 19.75
Cleveland	18.00 to 18.50
Eastern Pennsylvania	24.00 to 25.00
Pittsburgh	22.50 to 23.00
St. Louis	19.50 to 20.00

SHAFTING

Boston (shipping point)	18.50 to 19.00
Chicago	20.75 to 21.25
Eastern Pennsylvania	23.00 to 23.50
New York (dealers)	18.50 to 19.50
St. Louis	17.00 to 17.50

Iron Foundry Scrap

CAR WHEELS

Birmingham, iron	16.00 to 16.50
Boston (consumers)	17.50 to 18.00
Buffalo, iron	17.00 to 17.50
Buffalo, steel	19.00 to 19.50
Chicago, iron	18.00 to 18.50
Chicago, steel	18.50 to 19.00
Cincinnati	13.00 to 13.50
Eastern Pennsylvania	18.50 to 19.00
New York iron (dealers)	15.00 to 15.50
Pittsburgh, iron	18.50 to 19.00
Pittsburgh, steel	21.50 to 22.00
St. Louis, iron	17.25 to 17.75
St. Louis steel	18.50 to 19.00

NO. 1 CAST SCRAP

Birmingham, cupola	17.00 to 17.50
Boston	19.00 to 19.50
Buffalo	17.50 to 18.00
Chicago, No. 1 machinery	19.50 to 20.00
Chicago No. 1 railroad or agricultural	18.00 to 18.50
Cincinnati No. 1 Machinery cupola (net tons dealers)	18.00 to 18.50
Cleveland, cupola	18.00 to 18.50
Detroit (net tons)	15.00 to 15.50
Eastern Pennsylvania, cupola	18.50 to 19.50
New York, cupola (dealers)	15.00 to 15.50
Pittsburgh, cupola	17.50 to 18.00
San Francisco, delivered	20.00 to 21.00
Seattle	18.00
St. Louis, railroad	16.50 to 17.00
St. Louis, agricultural	16.25 to 16.75
St. Louis, machinery	18.50 to 19.00
Valleys	18.00 to 18.50

HEAVY CAST

Boston	17.50 to 18.00
Buffalo (breakable)	16.50 to 17.00
Cleveland	13.00 to 13.50
Detroit (automobile) (net tons)	20.00 to 20.50
Eastern Pennsylvania	17.00 to 18.00
New York (dealers)	14.50 to 15.00
Pittsburgh	17.00 to 17.50

MALLEABLE

Boston, railroad	19.00 to 19.50
Buffalo	20.00 to 20.50
Chicago, agricultural	16.50 to 17.00
Chicago, railroad	17.75 to 18.25
Cincinnati, railroad (dealers)	15.00 to 15.50
Cincinnati, agricultural (dealers)	16.50 to 17.00
Cleveland, agricultural	18.50 to 18.75
Cleveland, railroad	20.00 to 20.50
Detroit	15.50 to 16.00
Eastern Pennsylvania, railroad	17.00
Pittsburgh, railroad	20.50 to 21.00
St. Louis, agricultural	14.50 to 15.00
St. Louis railroad	16.00 to 16.50

Miscellaneous Scrap

RAILS FOR ROLLING
5 feet and over

Birmingham	17.50 to 18.00
Boston (dealers)	13.50 to 14.00
Buffalo	18.00 to 18.50
Chicago	17.75 to 18.25
Cleveland	17.25 to 17.50
Eastern Pennsylvania	18.50 to 19.00
New York	15.50 to 16.00
Pittsburgh district	20.50 to 21.00
St. Louis	17.50 to 18.00

LOCOMOTIVE TIRES

Chicago, No. 1	18.00 to 18.50
Chicago, cut	18.75 to 19.25
St. Louis, No. 1	17.00 to 17.50

LOW PHOSPHORUS PUNCHINGS

Chicago	17.50 to 18.00
Eastern Pennsylvania	19.00 to 20.00
Pittsburgh	21.50 to 22.00

Scrap

Demand Not Increased and Prices Decline as Consumers Delay—Market Is Waiting

CONDITIONS in iron and steel scrap do not parallel the finished steel market or pig iron and strength in the latter is not reflected in the former. Consumers betray little interest and tonnage is moving slowly, while prices are sagging somewhat. Occasional sales are made, but at prices progressively lower. Expected heavy buying in the new year has failed to develop.

Chicago, Jan. 12.—Considering the activity and strength in pig iron and finished steel, iron and steel scrap prices continue extremely weak and apparently the market has not yet touched bottom. The condition of over-supply continues and correction is not yet in sight. Dealers are trading in heavy melting steel at $15 to $15.25. The last price paid by a melter is $15.25. The Burlington railroad obtained $15.46, delivered Chicago, on melting steel it offered last week. The largest consumer of steel scrap is holding up shipments. While other grades are weak they have not dropped as far as steel. The market is in a state where dealers make small sales at current prices and when it comes to filling the order are able to buy lower than expected. Low phos punchings, both grades of malleable, grate bars, iron angle bars and railroad specialties have dropped 25 cents. The Burlington received $17.65, delivered, for miscellaneous rails; $14.12, delivered, for cast borings; $18.10, tracks, for No. 1 rails, $18.50 tracks, for malleable; and $19.50, tracks, for specialties, from a consumer.

Boston, Jan. 12.—Iron and steel scrap has strengthened noticeably during the week and speculative buying of steel scrap is brisk at Boston. Consumers' demand, however, is quiet and price levels in Pennsylvania are too low to take New England tonnage. A Worcester, Mass., consumer took 200 tons of trolley wheels at $18 delivered. Cast grades are quiet. Malleable has sold at $19.50 delivered.

New York, Jan. 12.—Although dullness is reported in some quarters, a good volume of scrap business is noted in others. Apparently no large tonnages are being placed, but fairly good moderate sized orders. One of the largest recent buyers of stove plate is a Bridgeport consumer, who is paying $14.50 delivered. Prices are unchanged.

Philadelphia, Jan. 12.—Iron and steel scrap is quiet, following the recent active buying by several important consumers. Prices are mainly unchanged, with some small adjustments.

Pittsburgh, Jan. 12.—Scrap activity is limited to buying by one or two steel interests which have come into the market since the first of the year. The Midland, Pa., user purchased several thousand tons of heavy melting steel at $19 and $19.25. A sale of 1000 or 2000 tons to another nearby plant is noted at $18.75 but it had some special distress features which took it out of the usual market channels. A sale of rerolling rails is noted at $20.50 and another lot brought $21; this is a reduction of 50 cents since the last transactions here.

Buffalo, Jan. 12.—Scrap dealers are a trifle less hopeful than heretofore, more as to ideas of values than as to the prospect of early tonnage sales, however. The trade still regards an offer of $18 for heavy melting steel as unattractive and regards $19 as acceptable for tonnage transactions.

Cleveland, Jan. 12.—Iron and steel scrap selling is exceedingly light, practically no new business appearing. Melters and dealers are at odds over prices and apparently the former are determined to postpone buying until the market is down to the level they regard as warranted.

Cincinnati, Jan. 12.—Conditions in iron and steel scrap reflect a discouraging aspect to dealers, since users are not interested in offerings.

St. Louis, Jan. 11.—While consumers are busy and the melt continues to gain, purchasing of scrap iron and steel is still backward. During the past few days, however, more interest has appeared, and the belief prevails that buying in quantity will develop soon. Reserves at mills and foundries are not large, though several important interests claim to have supplies for first quarter.

Birmingham, Ala., Jan. 11.—Heavy melting of scrap iron and steel is noted throughout this territory. Quotations are unchanged. Much old material is moving and inquiries indicate active conditions indefinitely.

Sheets

Some Valley Mills Close in Preference to Reducing Prices—General Demand Active

WHILE sheet mills in the Pittsburgh district are recovering their pre-holiday stride, operating at 90 to 95 per cent, some of the valley makers have closed their plants rather than reduce prices from the first quarter level. Valley operations are down to 84 per cent. Demand at Pittsburgh from all lines is reported active, and prices firm.

SHEET PRICES, PAGE 156

Youngstown, O., Jan. 12.—Rather than take sheet business at prices below the current level, certain district sheet producers have shut their plants. Suspension is not widespread but the number of idle mills has lowered the district operating rate from 94 to 84 per cent and the rate probably will be lower toward the close of this week. The present condition merely is seasonal but is somewhat intensified because of the rising market which buyers faced at the opening of this year. Many consumers covered requirements early in December before new price schedules were put in effect. This tonnage now has been worked off and mills are seeking business on the basis of 2.50c for blue annealed, 3.35c for black and 4.60c for galvanized. Producers entered this quarter with sheet bars commanding $2.50 to $4.50 a ton higher and say they are compelled to maintain present prices to show a profit at the end of the month. Efforts are being made to force down current prices, and rather than sell at a loss, certain producers have suspended operation. Other plants are operating at 100 per cent and sufficient specifications are in hand to afford the continuation of this rate for the next two weeks. Conditions in the high-grade sheet market have undergone no change. Consumers have released a good volume of specifications, and in many instances are pressing for delivery. One large consumer has held up rolling of splash guard and apron stock previously specified for January shipment, having in mind a change in gage and size. The price of 4.50c for No. 22 gage, with revised extras applying on seconds, is firm.

Boston, Jan. 12.—Sheet sales are quiet, buyers being covered. Present price levels are firm at 4.60c, Pittsburgh, for galvanized and 3.35c for black.

Philadelphia, Jan. 12.—Specifications on first quarter sheet contracts have not appeared, but mills are unconcerned as rolling schedules are four to six weeks ahead. New orders are small, hence the market is untested. Present prices appear firm.

Pittsburgh, Jan. 12.—Some attractive sheet specifications are noted. Sheetmakers lost considerably in operations during Christmas week but again are on their pre-holiday basis. Some days, and sometimes for three or four days at a time, the American Sheet & Tin Plate Co. maintains a 95 per cent average rate; for this week,

however, its average is 90 to 95 per cent. Independents are averaging around 90 per cent. Sheet orders are coming in more heavily from automotive interests. Tonnage specifications on blue annealed sheets also are being received from car builders, agricultural implement makers, range boiler manufacturers and manufacturers of small bolted tanks. Galvanized sheet consumers' needs are heavy in practically all lines. Pressure is not great upon producers for black sheets. Prices are fairly strong. Blue annealed is quoted at 2.50c, black at 3.35c, galvanized at 4.60c and full finished at 4.50c.

Buffalo, Jan. 12.—Sheet bookings are picking up, and future orders, with tonnages already on books, probably will result in continued operation at the present capacity rate of Buffalo district mills. Prices generally quoted are 3.35c Pittsburgh, for black and 4.60c for galvanized.

Chicago, Jan. 12.—Western sheetmakers have experienced a marked run on blue annealed and are sold farther ahead on this grade than on galvanized or black. Output of galvanized has not been affected by the continued high zinc market, but the threat continues. Sheetmakers in general are booked well through this quarter and are operating at capacity. The market is holding at 3.50c, Chicago, for black, 4.75c for galvanized and 2.65c for blue annealed.

St. Louis, Jan. 11.—Demand for all descriptions of sheets continues active. The outlook for the first half of this year is the best in more than a decade. Inquiry from the automotive industry indicates heavy buying during the next few months. The leading local producer quotes No. 28 black, 3.45c; No. 10 blue annealed, 2.60c and No. 28 galvanized, 4.70c.

Tin Plate

Leading Interest Books 100,000 Base Boxes—Market Steady

TIN PLATE PRICES, PAGE 156

Pittsburgh, Jan. 12.—While most of the activity of tin plate makers is directed toward the discharge of obligations on their books, from time to time new orders are booked. Last week the American Sheet & Tin Plate Co. which again is operating on an 89 per cent basis, booked three additional orders from food container manufacturers and from oil can makers, involving about 100,000 base boxes. All tin plate producers are well committed for the first half, and the market figure of $5.50 is unchanged.

Strip Steel

Releases On Contracts Following Inventory Give Activity

STRIP PRICES, PAGE 156

Pittsburgh, Jan. 12.—Some releases against hot and cold strip contracts have come to makers here this week. This movement started last week with the completion of several inventories and is gaining ground every day. Most of these so far have come from the automotive industry although other consuming lines are taking their share. Strip steel making is on a 70 to 75 per cent basis and January already gives promise of exceeding December's tonnage. Cold strips are firm at 3.90c and hot are quoted at 2.30c.

Pipe

Mill Bookings Increase—Line Pipe Inquiries Revived—Cast Demand Unusually High

BOOKINGS of full weight merchant pipe have increased since Jan. 4. Several large line pipe inquiries contemplated last fall are expected to be revived for spring action. Seamless oil country goods prices have been reduced to meet present market conditions. Cast demand is unusually heavy for the season. Prices at Chicago on large lots of 6-inch take $2 a ton concession.

PIPE PRICES, PAGE 156 AND 198

Pittsburgh, Jan. 12.—Since Jan. 4 standard full weight merchant pipe orders have been on the increase and the outlook is exceedingly bright for spring. All things point favorably toward a good market for line pipe, oil country goods, etc. Definite inquiries are scarce for line pipe although it is understood that the 75-mile line for the Petroleum Exploration Co., Sistersville, W. Va., which came up last September but which never was placed, will be revived shortly. A gas line 60 miles of 8-inch for Lexington, Ky., and one of similar size for a West Virginia point also will be placed at an early date. Prices are where they had been, mill levels being firm but jobber prices still being subjected to considerable competition.

Seamless oil country goods have been reduced, to meet market conditions of today which are different from when production of this material was started. The differential between seamless and lapwelded now is in the neighborhood of $8 per ton, which is more in line with productive costs.

New York, Jan. 12.—Although municipal demand is backward, private inquiry for cast pipe is well maintained. The market is steady, with shops booked ahead six to eight weeks on the smaller sizes. General contractors' bids go in today on 1000 tons of pipe for the local department of water supply, gas and electricity.

Chicago, Jan. 12.—On small work $42, Birmingham, or $50.20, Chicago, is being obtained for cast iron pipe 6 inches and over but this level is being shaded for large business, and $40 to $42, Birmingham, or $48.20 to $50.20, Chicago, is more nearly representative. The market has been shaded not only at Detroit to meet French competition but also in the central west on large orders from utility companies. The United States Cast Iron Pipe & Foundry Co. is expected to get 4500 tons of 36-inch at Detroit at its bid of $34.65, Birmingham, but formal action has not yet been taken. Much more work has been carried over by contractors into the new year than was the case a year ago. Engineers claim to have more business in sight than ever before at this period of the year.

A. M. Byers Co., Girard, O., sold 1000 tons of wrought iron pipe recently for the new Stevens hotel here.

Birmingham, Ala., Jan. 11.—Awards of cast iron pipe are not so numerous but unfilled tonnage remains at the high level of the last four weeks. Winter buying has been up to expectations. One of the pressure pipe companies of Birmingham is negotiating for the purchase of one or more blast furnaces to make its own iron. One pipe company has built a new shop for the manufacture of centrifugal pipe and another has installed new cupolas.

CONTRACTS PLACED

220 tons, 6-inch Matheson joint pipe for Los Angeles, Spec. 786-A, to Pacific Pipe & Supply Co.
123 tons, 8-inch De Lavaud pipe for Santa Cruz, Calif., to United States Cast Iron Pipe & Foundry Co.
100 tons, 6 and 8-inch class B pipe for Whittier, Calif., to American Cast Iron Pipe Co.

CONTRACTS PENDING

3266 tons, 24-inch for Santa Monica, Calif.
3150 tons, 500 tons 6-inch, 1000 tons 8-inch, 1000 tons 12-inch, 500 tons 16-inch and 150 tons castings, etc., for Milwaukee; bids in Jan. 22.
1806 tons for Tia Juana irrigation district, Nestor, San Diego county, Calif. Bonds to be voted on soon.
1000 tons, department of water supply, gas and electricity, New York; bids asked.
123 tons, 8-inch class B pipe for Santa Cruz, Calif.; United States Cast Iron Pipe & Foundry Co. low bidders on centrifugal pipe.
267 tons 4 and 6-inch Class B pipe for San Diego, Calif. Bids Jan. 11.
480 tons, 6 to 12-inch class B and C pipe for Oswego, Oreg.; bids in.
100 tons, 8 and 10-inch pipe for Lynwood, Calif.; bids in Jan. 13.
470 tons, 8-inch Matheson Joint pipe or equivalent for Los Angeles, Spec. 786-C; bids open Jan. 15.
225 tons, 6 to 12-inch pipe for Uplan, Calif.; bids will be called for within two weeks.
300 tons, Dearborn, Mich.; to be awarded shortly.
500 tons, Lebanon, Ill.; to be placed soon.
1030 tons, 10 to 36-inch for Brandon pool, Illinois waterway project, Joliet, Ill.; H. E.

Culbertson Co., Cleveland, low bidder on general contract.

Guatemala City, capital of Guatemala, Central America, has engaged the J. G. White Engineering Corp., New York, to study municipal requirements. Engineers of the White organization have left for Guatemala.

Bolts, Nuts, Rivets

Little Change In Demand Though Some Users Release Orders

NUT AND BOLT PRICES, PAGE 156

Chicago, Jan. 12.—Specifications for bolts and nuts are slow in developing but makers did not expect an upturn until the middle of January. Western bolt and nut works are operating unchanged at 70 to 75 per cent and have had opportunity to catch up. The International Harvester Co. proposal to trade implements for corn is receiving much attention as this company makes most of the bolts and nuts going into its implements while competitors buy in the open market. Prices are holding on the basis of 50, 10 and 10 off for large machine bolts. On small rivets the range is 70 and 10 to 70, 10 and 5 off, the former applying to small business.

Pittsburgh, Jan. 12.—Specifications against nut and bolt contracts are resuming after a temporary lull. Jobbers are buying and some important consumers are ordering larger lots and are furnishing releases. Rivet orders in carloads are on the increase from railroad shops, structural shops and other directions, and the larger manufacturers in this vicinity are maintaining 2.60c.

Cleveland, Jan. 12.—Specifications on bolts, nuts and rivets have increased with the passing of the inventory period, most makers reporting a good volume of business. Orders of one important bolt and nut maker are averaging larger than for the last three months. Jobbers specifications on small nuts and bolts are particularly good. The leading rivet interest is well sold up for first quarter at 2.60c, base Pittsburgh. All quotations are firm.

Iron Ore

Price Situation for 1926 Not Yet Defined—Lake Erie Stocks Lower

Cleveland, Jan. 12.—Action on iron ore prices for 1926 is not likely to be taken for some weeks, as there is no inquiry in the market at this time such as would develop a price and sellers are not yet prepared to quote. Talk of an advance of 50 cents or more is general, but some important producers have not committed themselves on their price policy.

Stocks of iron ore at Lake Erie ports Jan. 1 amounted to 7,081,302 tons, compared with 7,346,037 tons Jan. 1, 1925.

Bars

Heavy Demand Continues and Mills Are Busy on Contracts—Consuming Rate Heavy

DEMAND for steel bars continues, and though buying is less at present, mills are filled and scheduled well ahead on specifications. Deliveries are several weeks deferred on some sizes. Prices are firm and on small lots a premium is obtained in some cases. In the West railroads and implement makers are large buyers. Automotive users are taking tonnages.

BAR PRICES, PAGE 156

Chicago, Jan. 12.—Makers of soft steel bars are looking forward. They can see no lessening of the present run of orders and specifications, both of which exceed shipments. A mark of confidence is that business is not tempered by strained feelings concerning prices or supplies. All classes of users are enjoying a steady run of business and their aggregate buying of bars is fattening mill books. On some sizes delivery is as distant as 60 days, but no user is being pinched. Railroad buying is increasing, implement makers' schedules are becoming tighter and those automobile plants which took in no material over inventory time are almost back to normal. Soft steel bars are 2.10c, Chicago, with no change believed near.

Rail steel bars are nearer a flat price of 2.00c, Chicago, than 2.10c. One Chicago Heights mill is operating double turn and another single turn. Specifications are slow in picking up after the holidays. Bar iron is not particularly strong at 2.00c, Chicago, but the outlook for improved railroad buying is good.

Boston, Jan. 12.—Bar sales showed a slight increase during the week, but are still below the December average. First quarter contracts are about equal to the tonnage sold during last quarter of 1925. The price holds firm at 2.00c Pittsburgh or 2.365c delivered.

Philadelphia, Jan. 12.—Demand for steel bars is quiet but mills are scheduled full on specifications in hand.

Buffalo, Jan. 12.—Larger bar consumers are able to buy at 2.265c, Buffalo, and this seems to be the general quotation for deferred shipment. A good volume of first quarter business is on books of Buffalo district makers and bar mill operation is in excess of 80 per cent of capacity.

Pittsburgh, Jan. 12.—Merchant steel bar orders are coming in much better than in December. For some prominent makers here, January so far is ahead of November to date, November being the best previous month. From 2.00c to 2.10c represents the market spread. Shipments are high because consumers all need the material. The delivery situation grows tighter; some bars which were ordered late in December for delivery within two or three weeks now are being called for but cannot be shipped for two or three weeks from now. Other deliveries are three to eight weeks deferred, depending upon sizes. The 8-inch and 9-inch mills are all well obligated, indicating a heavy demand for smaller sizes. Automotive orders are picking up and other consuming lines such as railroads are likewise buying heavier. Railroads are taking more iron bars. Refined iron is stronger at a 3.00c minimum.

Cleveland, Jan. 12.—A good volume of business in steel bars continues in this district despite the fact that automobile plants are not specifying heavily at this time of the year. However, automobile manufacturers are planning for greater production in 1926 than in 1925 and if the announced schedules of a few makers is a criterion for the entire industry, the steel requirements for the early part of the year at least will be ahead of those of last year. Prices are firm at 2.00c, Pittsburgh.

Hoops and Bands

Makers Sold For Entire First Quarter Production

HOOP PRICES, PAGE 156

Pittsburgh, Jan. 12.—Hoop and band makers have obligated themselves for practically every pound they can produce in the first quarter. For a time specifications were held up, particularly during the holiday season, but these are coming forward again and larger users among the automotive and cooperage industries are taking fairly large tonnages each week. Miscellaneous stamping manufacturers likewise are specifying well. The market price is unchanged and firm at 2.50c.

Cold Finished Steel

New Business and Released Tonnages Give Mills Activity

Pittsburgh, Jan. 12.—Cold finished bar business is improving. Additional new business is being placed but the chief activity centers in released specifications against contracts, on which shipments were interrupted because of the holidays and inventories. Operating schedules average 85 per cent with some plants operating as near 100 per cent as they ever achieve. The market price of 2.50c is firm and this promises to advance before second quarter contracts are made.

Structural Shapes

Awards Unusually Heavy for Season—New Projects Slow in Appearing, but Heavy Tonnage Expected for Spring Delivery

ACTIVITY in the structural market is unusually brisk. Buying is heavy for the season, and the week's awards are above those of the 1925 weekly average. Railroad bridgework and construction took 4500 tons in four jobs last week. Inquiries are not as numerous as expected, but heavy demand for spring construction is being anticipated. Another subway section at New York, requiring 5950 tons is the largest new inquiry to appear. Weirton Steel Co., Weirton, W. Va., is to buy about 5000 tons additional for its extension program.

Prices are firm, with mills endeavoring to establish 2.00c, Pittsburgh equivalent, as a minimum. At Chicago fabricators are beginning to carry larger stocks, encouraging to mills.

STRUCTURAL SHAPE PRICES, PAGE 156

New York, Jan. 12.—While orders are not particularly numerous, structural inquiry is coming out in unusually good volume for the season and the market generally is firm. Subway work again is a feature, with 5950 tons pending for a new section and 2850 tons for another, placed. Railroad buying also is heavier.

Boston, Jan. 12.—Estimators are busy on new work and an exceptionally heavy building program is shaping for early spring. Prices are firm.

Philadelphia, Jan. 12.—Structural prices tend higher and a larger percentage of present business is going at new quotations. The minimum on large tonnages continues 1.85c, base eastern mill, but the usual figures are 1.95c to 2.05c, while where Pittsburgh prices are quoted, 1.90c Pittsburgh is the usual minimum with 2.00c on small lots.

Buffalo, Jan. 12.—Shape inquiry is improving slowly. Sellers quote 2.165c, Buffalo, on larger lots. An early increase in sales is anticipated.

Pittsburgh, Jan. 12.—The new year has started auspiciously for structural shape fabricators in this section. In addition to the 3600 tons awarded the American Bridge Co., as noted last week, about 5000 tons are yet to be let in connection with the Weirton Steel Co.'s expansion program. Prices continue unchanged at 1.90c to 2.00c, with a strong effort being made to obtain the maximum figure, particularly on new business.

Cleveland, Jan. 12.—Specifications by fabricators and manufacturers for structural plain material are heavy, local mill representatives report. Definite projects are few, and are featured by award of 1500 tons for an automobile plant in Toledo to Jones & Laughlin Steel Corp. Plain material is firm at 2.19c Cleveland or 2.00c Pittsburgh. Inquiry of 100 to 500-ton jobs has lessened.

Cincinnati, Jan. 12.—While recent awards involved small tonnages, considerable work has come out for figuring since the first of the year. Fabricating shops, particularly those interested in the manufacture of gas holders are bidding on several million dollars worth of work. Judging from the number of large projects contemplated in this district for 1926 the market should be active. Prices are firm despite the lack of buying.

Chicago, Jan. 12.—For more than a year the mills have been carrying structural steel fabricators in the matter of stock, but from the manner in which business is picking up and fabricators are specifying it appears that fabricators are taking over the load. No cessation is evident in the building world and awards are seasonally heavy.

Awards Compared

	Tons
Awards this week	40,021
Awards last week	5,750
Awards two weeks ago	28,734
Awards this week in 1925	50,313
Average weekly awards, Dec.	26,219

CONTRACTS PLACED

2850 tons, subway section No. 2, Route 102, New York, to the McClintic-Marshall Co.

2300 tons, Bing & Bing apartment, Fifty-sixth street and Park avenue, New York, to A. E. Norton, Inc.; owing to a typographical error this award was previously noted as comprising 300 tons.

2200 tons, locomotive repair shops for the Florida East Coast railroad, St. Augustine, Fla., to the Virginia Bridge & Iron Co.

2050 tons, office building for Michigan-Lake Corp., Chicago, to McClintic-Marshall Co. Alfred S. Alschuler, 28 East Jackson boulevard, Chicago, architect.

2000 tons, Pere Marquette hotel, Peoria, Ill., to Mississippi Valley Structural Steel Co. Hewitt & Emerson, Peoria, architects.

1800 tons, California-Montgomery building, San Francisco, to United States Steel Products Co.

1800 tons, office building at Philadelphia, to the McClintic-Marshall Co.

1500 tons, forge shop for Willys-Overland Co., Toledo, O., to Jones & Laughlin Steel Corp.

1500 tons, Grand Rapids Trust Co. building, Grand Rapids, Mich., to Whitehead & Kales Co., announced previously as unstated tonnage.

1500 tons, Vantage Ferry bridge, State of Washington, to United States Steel Products Co.

1425 tons, bridges for Union Pacific railroad, to American Bridge Co.

1200 tons, United Gas Improvement Co. building, Philadelphia, to McClintic-Marshall Co.

1200 tons, bridges for the Baltimore & Ohio railroad, to the American Bridge Co.

1100 tons, bridges for the Lehigh Valley railroad, of which 750 tons went to the Bethlehem Steel Corp., and 350 tons to the American Bridge Co.

1075 tons, new floor system for track elevation bridges for Rock Island railroad in Chicago, to McClintic-Marshall Co.

1000 tons, Bricken apartment, Eighty-eighth street and Park avenue, New York, to Hay Foundry & Iron Works, as noted last week.

900 tons, municipal viaduct, Baltimore, to the Bethlehem Steel Corp.

800 tons, highway bridge over the Delaware river, Stockton, N. J., to the American Bridge Co.

800 tons, Emergency Aid hospital, Philadelphia, to the McClintic-Marshall Co.

700 tons, addition to the Ward Baking Co. building, Pittsburgh, to the American Bridge Co. through W. F. Trimble & Sons Co., Pittsburgh, general contractor.

600 tons, trestle and steel bins for United Fuel & Supply Co., Detroit, to Whitehead & Kales Co.

600 tons, addition to airplane hangar for Ford Motor Co., Detroit, to Whitehead & Kales Co.

600 tons, Y. W. C. A. building, Washington, to Barber & Ross Structural Iron Works.

600 tons, apartment hotel, 237 Madison avenue, New York, to Geo. A. Just Co.

600 tons, Elizabeth Arden apartment hotel, Chicago, to Gage Structural Steel Co.

550 tons, theater for A. H. Blank Theaters Corp., Omaha, Nebr., to Omaha Structural Steel Works.

550 tons, Skinner building, Seattle, to Hofius Steel & Equipment Co.

500 tons, buildings for the Follansbee Bros Co., Follansbee, W. Va., to the J. E. Moss Iron Works.

500 tons, Media high school, Philadelphia, to McClintic-Marshall Co.

500 tons, apartment, West Eighty-sixth street, New York, to Paterson Bridge Co.

425 tons, Henry Clay Frick training school, Pittsburgh, to the John Eichleay Jr. Co., through J. G. Fullman Co., general contractor.

390 to 400 tons, Palace theater, Akron, O. to American Bridge Co.

380 tons, Famous Players theater, San Antonio, Tex., to Virginia Bridge & Iron Co.

350 tons, Western Hills high school, Cincinnati, to L. Schreiber & Sons Co.

300 tons, apartment, West Nineteenth street, New York, to Paterson Bridge Co.

300 tons, addition to Cellite Products Co. plant, Lompoc, Calif., to McClintic-Marshall Co. of California.

300 tons, California National bank, Sacramento, Calif., to Palm Bridge & Iron Works.

300 tons, buildings for the Wheeling Steel Corp., Wheeling, W. Va., to the J. E. Moss Iron Works.

250 tons, binding for steel furnace, Pittsburgh Crucible Steel Co., Midland, Pa., to the W. N. Kratzer Co., through George Ainsworth, general contractor.

200 tons, lime crusher buildings, etc., at Haverstraw, N. Y., to the Bollinger-Andrews Construction Co., through the Burrell Engineering Co., Chicago.

164 tons, mill building for the Columbia Steel Corp., Pittsburg, Calif., to Pacific Coast Engineering Co.

150 tons, addition to Good Samaritan hospital, Cincinnati, to J. E. Moss Iron Works.

125 tons, court house, Newport, R. I., to Tower Iron Works.

125 tons, clinker mill for Michigan Alkali Co., Wyandotte, Mich., to Whitehead & Kales Co.

120 tons, plant for Blackmere Rotary Pump Co., Grand Rapids, Mich., to Whitehead & Kales Co.

120 tons, plant for Mosaic Tile Co., Zanesville,

O., to Pittsburgh Bridge & Iron Works; H. K. Ferguson Co., Cleveland, engineer.
118 tons, plant for National Ice Co., Detroit, to Whitehead & Kales Co.
112 tons, plant for Pacific Coast Forge Co., Seattle, to Wallace Equipment Co.
110 to 190 tons, building for International Nickel Co., Huntington, W. Va., to McClintic-Marshall Co. H. K. Ferguson Co. engineer.
100 tons, Y. M. C. A. Glendale, Calif., to McClintic-Marshall Co. of California.
100 tons, Holly garage, Pittsburgh, to the McClintic-Marshall Co.
100 tons, addition to building of Batchelder Wasmun Co., Detroit, to Whitehead & Kales Co.
100 tons, plant for Michigan Steel Corp., Ecorse, Mich., to Whitehead & Kales Co.
100 tons, Weinburg stores, McKeesport, Pa., to the Guibert Steel Co.
70 to 100 tons airplane hangars at Cleveland airport for Ford Motor Co., Detroit, to Forest City Structural Steel Co. H. K. Ferguson Co. engineer.

CONTRACTS PENDING

8000 tons, plates and shapes, two light battle cruisers for navy department, Washington; specifications issued, bids due March 1.
5950 tons, subway section No. 5, Route 102, along Eighth avenue, New York; general contractors bids close Jan. 22.
5000 tons, additional work in connection with buildings for the Weirton Steel Co., Weirton, W. Va.; bids being taken.
2500 tons, Strauss-Hirschberg department stores, Youngstown, O.; bids being considered.
1500 tons, hospital in Chicago; plans by Frank D. Chase, Inc., 720 North Michigan avenue, Chicago.
1200 tons, 18-story apartment for J. J. Hearn, Forty-seventh street and Lexington avenue, New York; pending.
1200 to 1500 tons, Duwamish river bridge, Spokane street, Seattle; pending.
1200 tons, subway section No. 6, Route 8, New York; bids closed Jan. 11.
1000 to 1500 tons, five or six schools, Buffalo; for 1926 construction.
1000 tons, Robert T. Lyons apartment, Forty-seventh street and Madison avenue, New York; pending.
1000 tons, apartment, 760 West End avenue, New York; pending.
1000 tons, Gillespie dam bridge, Phoenix, Ariz.; bids in Jan. 16.
800 tons, station for the Southern railways, Greensboro, S. C.; pending.
500 tons, nurses home, Johns Hopkins university, Baltimore; pending.
350 tons, hospital, Philadelphia; bids asked.
300 tons, plant buildings for Proctor & Gamble Co., Port Ivory, Staten Island, N. Y.; pending.
300 tons, four bridges for Lehigh Valley railroad; pending.
300 tons, city hall, Pasadena, Calif.; Brombacher Iron Works low bidder.
300 to 400 tons, Martinique hotel, Buffalo; pending.
300 tons, Fourteenth street eastern subway section, Brooklyn, N. Y.; Oakdale Contracting Co. low on general contract.
250 tons, Garfield school, Oakland, Calif.; bids being received.
170 tons, Siletz river bridge, Lincoln county, Oreg.; bids in Jan. 19.
100 tons, savings bank, Port Chester, N. Y.; pending.
Unstated tonnage, Fort Washington subway between 184th and 193rd streets, New York; bids close Feb. 5.
Tonnage unstated, 1250-room hotel, Liberty avenue and Grant street, Pittsburgh; pending.

Installs Mine Hoist

Birmingham, Ala., Jan. 11.—The Hardie-Tynes Mfg. Co. has completed and is delivering to the Woodward Iron Co. for use at its No. 2 ore mines, what is said to be the largest mine hoist built or shipped into this district. The unit is motor-driven and will operate two skips in balance at a speed of 3000 feet per minute on a 30-degree slope, each loaded skip having a weight of 20 tons.

Concrete Bars

Awards Small But Numerous—Inquiries Slow in Developing—Prices Steady

CONCRETE reinforcing buying has not recovered its momentum lost during the holidays. Awards of the past week were numerous but involved mostly small tonnages. Seasonal dullness is not as marked as in previous years. Inquiries continue slow in developing, with larger projects being deferred. Prices show no change, holding at a 2.00c Pittsburgh equivalent.

REINFORCING BAR PRICES, PAGE 156

Chicago, Jan. 12.—December awards of reinforcing bars were so heavy that the trade does not look for January to be more than an average month. Pending work is considerably below the level of 30 days ago, owing to the December cleanup. Warehouses are ordering generously from current bar rollings at the mills. The market on billet bars is 2.60c, Chicago, and on rail steel bars 2.00c to 2.10c, mill.

Buffalo, Jan. 12.—First quarter reinforcing bar business is expected to be fairly satisfactory in spite of limited bookings this week. Sellers quote 2.265c on lots which can be worked into mill schedules and 2.75c on stock lots.

Pittsburgh, Jan. 12.—Action in connection with many of the larger projects involving the use of reinforcing concrete bars continues to be deferred and most of the awards noted recently are small. Some large tonnages are pending here which may be closed before the week is ended. The market is firm at 2.00c for new steel bars.

Cleveland, Jan. 12.—Seasonal dullness for concrete bar awards is broken only by the interest in two 2000-ton projects pending in this district. One is a sewage disposal plant at Willow and the other a filtration plant at Akron, O. New inquiry is light. Billet bar sales are steady at 2.19c to 2.35c, Cleveland, and rail steel at 1.85c to 2.00c, mill.

Awards Compared

	Tons
Awards this week	5,424
Awards two weeks ago	4,725
Awards this week in 1925	4,565
Average weekly awards, Dec.	4,750

CONTRACTS PLACED

500 tons, plant for W. S. Tyler Co., Cleveland, to Paterson-Leitch Co.
400 tons, public school in Chicago, to Olney J. Dean & Co. A. & E. Anderson Co., 19 South LaSalle street, Chicago, general contractor.
350 tons, apartment at 900 North Michigan avenue, Chicago, to Concrete Steel Co.; J. B. French Co., 30 North Michigan avenue, Chicago, general contractor.
350 tons, subcontract for Skinner building, Seattle, to Pacific Coast Steel Co.
330 tons, public school in Milwaukee, to Concrete Engineering Co.
320 tons, garage for General Electric Co., Fifty-third and Santa Fe avenue, Los Angeles, to American System of Reinforcing.
300 tons, Monroe-Wabash building, Chicago, to Concrete Steel Co.; George A. Fuller Co., 140 South Dearborn street, Chicago, general contractor.
300 tons, hotel at Peoria, Ill., to Olney J. Dean & Co.; Hewitt & Emerson, Peoria, architects.
300 tons, building for Elgin Clock Co., Elgin, Ill., to Joseph T. Ryerson & Son, Inc.; plans by Graham, Anderson, Probst & White, Chicago.
240 tons, Sunset Printing Co. plant, San Francisco, to unnamed jobber.
236 tons, Auto Sales & Service Co. building, Los Angeles, to unnamed jobber.
253 tons, Jonas building, Fifty-eight and South Park avenue, Los Angeles, to unnamed jobber.
210 tons, Henry Durant school, San Francisco, to unnamed jobber.
200 tons, Belmont Harbor hotel, Chicago, to Concrete Steel Co.; Robert S. de Golyer & Co., 307 North Michigan avenue, Chicago, architect.
190 tons, additions to the St. Louis ball park, St. Louis, to Laclede Steel Co.
190 tons, Paul Brown building at St. Louis, to Laclede Steel Co.
180 tons, vehicular tunnel approaches, New York and New Jersey, divided between Kalman Steel Co. and Igoe Bros. Deriso Bros. general contractors.
180 tons, Kress department store, Oakland, Calif., to Steel Service Co.
175 tons, incinerator, Buffalo, to unnamed Buffalo fabricator.
150 tons, Elks building, Brooklyn, N. Y., to Joseph T. Ryerson & Son, Inc.
100 tons, McCrory stores, St. Louis, to Laclede Steel Co.
100 tons, hotel, Monterey, Calif., to Truscon Steel Co.
100 tons, theater, Chicago, to Concrete Engineering Co.; Lind Construction Co., Chicago, general contractor.
100 tons, building for Waterway Paper Products Co., Chicago, to Olney J. Dean & Co.

CONTRACTS PENDING

5000 tons, Conoqingo hydroelectric plant near Havre de Grace, Md.; general contract sublet through Stone & Webster, to Arundel Corp., Baltimore.
300 tons, building for Elgin Clock Co., Elgin, Ill.; plans being revised by Graham, Anderson, Probst & White, 80 East Jackson boulevard, Chicago.

Buys Heating Furnaces

Contracts for two new furnaces have been placed with the Chapman-Stein Furnace Co., Mt. Vernon, O. by the West Virginia Rail Co., Huntington, W. Va. One furnace will be used for heating rods for making spikes; the other will be a car- type spike annealing furnace. The latter will have a capacity of 10,000 pounds of railroad spikes a charge. Natural gas will be used as fuel.

Rails, Cars

Railroad Equipment Activity Increases—Car Awards Heavy —Prospective Buying Good

ACTIVITY in the railroad equipment market is gaining momentum. Locomotive buying, although scattered, totals more than 50 for the week. Car awards include an additional 2000 for the Baltimore & Ohio, and 2000 for the Union Pacific. Other orders total about 1500. Expected buying is encouraging. Track material specifying is heavy.

RAILROAD TRACK MATERIAL PRICES, PAGE 156

New York, Jan. 12.—Completed figures place the total number of cars awarded by domestic railroads in 1925 at 77,110, with figures for December at 16,885. The latter compares with 11,685 for November, the best previous month of that year. Following is a comparative statement:

December	16,885
November	11,685
October	11,145
September	7,905
August	2,875
July	800
June	1,835
May	6,985
April	5,060
March	4,730
February	5,510
January, 1925	1,695
1923 total	103,487
1924 total	144,425
1925 total	77,110

Current buying includes a fair number of moderate sized contracts. New inquiry in the East at this time is comparatively slack. Locomotive buying of the week exceeds 50. The Hocking Valley is asking prices on the repair of 1 to 16 locomotives.

Boston, Jan. 12.—Nearly all steam and electric railroads in New England have issued specifications during the week covering 1926 frog and switch requirements and orders placed exceed $300,000.

Pittsburgh, Jan. 12.—Increased activity in the bituminous coal mines is reflected in light rail sales. More 100 and 150-ton orders are noted. The $36 per ton price has not disappeared and at times $38 is obtainable.

Chicago, Jan. 12.—Prospects for freight car buying by western roads continue to brighten and the mills see fully 200,000 tons of car steel in sight. If this prospective car buying materializes it may have a decisive effect upon finished steel prices. The Burlington may close today on 1000 box cars. The Illinois Central is expected in the market shortly for 2500 to 3000 cars of various types. The Pacific Fruit Express' 5041 refrigerator cars should be placed this month. An inquiry for cars for the Southern Pacific may materialize from a conference in California today.

The Chicago & North Western, Chicago & Eastern Illinois and Rock Island railroads are considering programs. The Baltimore & Ohio is reported planning to buy additional gondolas. The Burlington is building 25 suburban coaches in its own shops, the first of over 100, and has bought the underframes from the Bettendorf Co. The Union Pacific has placed a total of 2047 freight and passenger cars with western shops. The Reading contemplates purchase of 1000 additional cars.

Several large orders are expected to be placed with Chicago mills this week. Specifications against 1926 rail contracts already are coming in liberally. Last week's track fastening business totaled nearly 25,000 tons and more is in sight.

Wabash railroad is inquiring for 5000 tons of tie plates for 80, 90 and 110-pound rails, 1400 tons of track spikes and 3000 tons of track bolts. The Mobile & Ohio is inquiring for 2500 to 4000 kegs of track spikes and 400 to 700 kegs of track bolts for delivery during the first half.

Pere Marquette railroad is in the market for 15,000 tons of 90-pound rails.

ORDERS PLACED

Illinois Central, 800 automobile cars, 400 each to Pullman Car & Mfg. Corp. and American Car & Foundry Co., as announced last week.

Reading railroad, 15 refrigerator cars, to American Car & Foundry Co.

Union Pacific, 700 50-foot all steel automobile box cars, to General American Tank Car Co.

New York Central, 500 automobile box cars, to the Standard Steel Car Co.; this is in addition to a similar number ordered from the Standard Steel Car Co. early in December; the New York Central also is building 1000 gondola bodies in its own shops.

Kansas City, Mexico & Orient, 50 box cars, in its own shops.

New York, Chicago & St. Louis, 200 freight car underframes, to the Pressed Steel Car Co.

Wichita Falls & Southern, 50 box cars, to the American Car & Foundry Co.

Manati Sugar Co., 50 cars for export, to the American Car & Foundry Co.

Chicago & Northwestern, 250 ballast cars, to the Rodger Ballast Car Co., as announced last week, which in turn is understood to have placed the erection contract with the American Car & Foundry Co.

Alan & Garcia, 90 mine car bodies, to the American Car & Foundry Co.

Missouri, Pacific, 18 miscellaneous coaches to the American Car & Foundry Co.

Southern Pacific, 500 freight cars, to own shops.

Goodwin-Gallagher Sand & Gravel Co., 12 hopper cars, to the American Car & Foundry Co.

Mobile & Ohio, 10 miscellaneous coaches, to the American Car & Foundry Co.

Union Pacific, 2000 freight and 47 passenger cars as follows: 700 automobile cars to General-American Car Co., 300 automobile cars to Pennsylvania Tank Car Co., 500 ballast cars to Rodger Ballast Car Co., 500 ballast and 30 passenger cars to Pullman Car & Mfg. Corp., and 17 passenger cars to American Car & Foundry Co.

Chicago, Burlington & Quincy, 25 suburban car underframes, to Bettendorf Co.

Delaware, Lackawanna & Western, 40 milk cars, to Standard Steel Car Co., and 25 cabooses to Magor Car Corp.

Baltimore & Ohio, 2000 cars, 1000 additional box each to Bethlehem Steel Co. and Standard Steel Car Co.

LOCOMOTIVES PLACED

Florida East Coast, 16, 10 mountain type and 6 switching engines, to American Locomotive Co.

(*Continued on Page* 171)

Wire

Better Specifications Coming to Mills—Prices Are Firm—Jobbers Take Most Current Tonnage

BETTER specifications for nails and wire have been coming to mills since the turn of the year and conditions are satisfactory. Rumors are heard of an advance in prices but nothing definite has developed. Current prices have not been satisfactory to makers. Jobbers are taking most of the present tonnage, preparing for spring demand from consumers.

WIRE PRICES, PAGE 156

Chicago, Jan. 12.—Rumors of a price advance in wire and wire products again are current. While prices on these products have been less satisfactory than in almost all other lines, it is not believed the present levels of 2.55c, Chicago, for plain wire and 2.70c for wire nails are yet sufficiently strong to stand an advance. Specifications have improved to a fair degree since the holidays and western mills are operating at 60 to 65 per cent. Mills still look forward to good spring business. Relatively, manufacturing lines are in better demand at the moment than the jobbing lines. Stocks still are light.

Boston, Jan. 12.—An active wire demand has developed during the past week and orders totaling several thousand tons are reported. Prices are firm at 2.865c delivered Boston and 2.65c Worcester.

Pittsburgh, Jan. 12.—Pleasing specifications are coming from wire products jobbers, mostly mixed carloads of wire, wire nails and fencing. Most of these are for shipment on 60-day contracts. Operations average around 65 per cent. A few cement coated nail orders are coming through and whereas some low prices recently were available, 1.85c again appears to be minimum. The other bases are unchanged, 2.50c for plain wire and 2.65c for wire nails.

Nonferrous Metals

Demand Continues Quiet But Prices Appear Steady Except on Tin—Nickel Is Higher—Product Shipments Heavy

Prices of the Week, Cents a Pound

	Copper—Electro delivered	Copper—Lake delivered	Copper—Casting refinery	Spot Straits Tin, N. Y.	Lead New York	Lead East St. Louis	Zinc St. Louis	98-99% Aluminum	Spot Antimony	Ingot Nickel
Jan. 6	14.12½	14.25	13.37½	63.25	9.40	9.15	8.75	27.00	25.00	35.00
Jan. 7	14.12½	14.25	13.37½	63.00	9.37½	9.15	8.75	27.00	24.75	35.00
Jan. 8	14.12½	14.25	13.37½	62.75	9.37½	9.15	8.75	27.00	24.50	35.00
Jan. 11	14.12½	14.25	13.37½	62.25	9.37½	9.15	8.75	27.00	24.50	35.00
Jan. 12	14.12½	14.25	13.37½	62.75	9.45	9.15	8.75	27.00	24.00	35.00

NEW YORK, Jan. 12.—Buying of metals continues quiet but prices are steady to firm except in tin. The latter has fallen from its position close to 64.00c as the new year began. Aluminum also has been cut 1 cent, effective the beginning of the new year, and the market appears to be established at the level that ruled for more than a year until the short-lived advance of last October.

Nickel was increased 1 cent a pound to the following prices for small and spot lots a week ago: Ingot 35.00c, shot 36.00c, electrolytic 39.00c. An increase of 2 cents in contract prices for this year was announced some time ago, large lots being usually a little under the prices named above. Other interests have followed the prices established by the leading interest. Business in nickel is good.

Zinc—Monthly and annual statistics of the American Zinc institute and the government showed zinc to be moving in tonnages seldom equalled. Shipments in December at 51,421 tons were about 2300 tons less than output, as the latter increased and export shipments fell. Nevertheless the increase in stocks to 9295 tons at the beginning of this year leaves the situation unusually tight or less than half the amount in stock a year ago (at smelters). Domestic shipments in December set a new monthly record, nearly 50,000 tons, and similarly for the year at 537,698 tons. However, output for the year was not as large as some war years when exports ran to tremendous heights. The Institute gives output for the year as 590,928 tons and the government a little smaller, but both indicate practically the same comparisons.

Copper—The red metal has been fairly steady about 14.12½c delivered (14.25c midwest, lake or electrolytic) for some time. A little domestic business is done from day to day but few big tonnages, and little export business is done. Shipments continue of good size. Government figures for the year show domestic consumption of 1,485,000,000 pounds, the largest except 1918, and very close to that year. American Bureau of Metal Statistics figures for December show larger stocks.

American Brass Co. and Anaconda Copper Co. rolled and drawn product output last year, about 40 per cent of domestic copper consumption, was the largest on record. Exports slipped a little from the record made in 1924.

Lead—The heavy metal has been in a strong market but in the past day or two has hesitated a little. Some New York prices, especially for quick shipment, are a little above the prices in the table but the American Smelting & Refining Co. on January and February and the open market on February have been a little less.

Tin—Buying was active a few days ago but London did not subsequently reflect strength, so the market has eased from recent high prices. Nearby positions are relatively tight and all metal is well sold before arrival. However, futures continue to sell almost 1 cent below spot for more distant positions.

Mill Products

Base prices cents per pound, f.o.b. mill

SHEETS	
High brass	19.12½
Copper, hot rolled	22.50
Zinc, ga. 9 to 17	12.00
Lead full sheets (cut ¼c more)	13.00 to 13.50
Aluminum, bright flat, up to 10 gage	37.50
SEAMLESS TUBES	
High brass	23.75
Copper	24.50
RODS	
High brass (round ⅝ to 2½-inch)	16.87½
Naval brass	19.62½
WIRE	
Copper	16.00 to 16.12½
High brass	19.87½

Old Metals

Dealers' buying prices, cents per pound

HEAVY RED BRASS	
New York	9.00
Chicago	9.50 to 9.75
Cleveland	9.25 to 9.50
HEAVY YELLOW BRASS	
New York	7.00
Chicago	8.00 to 8.25
Cleveland	7.25 to 7.50
ZINC	
New York	5.25
Cleveland	4.75 to 5.00
HEAVY COPPER AND WIRE	
New York	11.75
Chicago	11.50 to 12.00
Cleveland	11.00 to 11.25
RED BRASS BORINGS	
New York	8.25
YELLOW BRASS TUBING	
Cleveland	7.25 to 7.50
LIGHT COPPER	
New York	9.50
Chicago	9.75 to 10.25
Cleveland	9.75 to 10.00
LIGHT BRASS	
Chicago	7.25 to 7.50
Cleveland	6.25 to 6.50
ALUMINUM	
Borings, Cleveland	14.00 to 15.00
Cast	18.50 to 19.50
Clippings	21.00 to 22.00

Secondary Metals

Remelt aluminum No. 12	24.00 to 25.00
Brass ingot 85-5-5-5	11.75 to 12.25

Coke By-Products

Distillate Market Easier—Naphthalene Prices Firmer

New York, Jan. 12.—Owing to increased production, light oil distillates are easier. Toluol and solvent naphtha can be shipped in two to three weeks, and by the first of February it is believed virtually spot delivery will be possible. Benzols are available for early shipments.

Prices continue unchanged, with pure and 90 per cent benzol holding at 24 cents, works, in tanks, and 29 cents in drums; toluol and solvent naphtha at 35 cents works, in tanks and 40 cents in drums, and commercial xylol at 36 cents in tanks and 41 cents in drums.

Brisk demand prevails for naphthalene, with the market firmer and a price advance likely at any time. Naphthalene flakes may be quoted at 7 cents works, and balls at 8 cents.

Sulphate of ammonia demand also is improving, although inquiries are not large. Prices are steady at $2.80 to $2.85, delivered, for domestic account, and $2.70 to $2.75 port, in double bags for export.

Coke Oven By-Products

Per Gallon at Producers' Plants in Tank Lots

	Spot	Contract
Pure benzol	$0.24	
Toluol	0.35	
Solvent naphtha	0.35	(nominal)
Commercial xylol	0.36	(nominal)
Phenol	0.22	0.22
Per Pound at Producers' Plants		
Naphthalene flakes	0.07	
Naphthalene balls	0.08	
Per 100 Pounds Delivered		
Sulphate of ammonia	$2.82½	

More Pig Iron Imported

Philadelphia, Jan. 12.—Following are the importations of iron and steel at this port for the week ended Jan. 9: 3800 tons chrome ore, Port Africa; 500 tons chrome ore, British India; 869 tons pig iron, British India; 800 tons pig iron, Netherlands; 660 tons pig iron Luxemburg; 500 tons pig iron, Germany.

Slow Start on Coast

Construction Prospects Are for Further Records—Small Demand for Other Products

SAN FRANCISCO, Jan. 9.—(*By Air Mail*)—Trading in iron and steel products during the first week of the year has been light, as was expected. In many instances the inventory period was not completed until the first of the year. The structural shape market was the most active this week, over 2500 tons being awarded. Prices are on a higher level than in months past.

Construction during the past year has been the heaviest in the history of the Coast. A new high record was set by Los Angeles in 1925, beating the former record, in 1924, by more than $2,000,000. The value of permits issued in 1925 was $152,636,436, compared with $150,147,516 in 1924. December permits numbered 3159 with an estimated value of $16,810,677 while permits issued in December 1924 totaled 3486 with a value of $11,923,961.

Pig Iron and Coke

Dealers in pig iron and coke state inquiries and sales have been confined to small lots. Stocks in foundry yards are sufficient for present requirements. Chinese iron is again arousing the interest of the trade. For the past four or five years imports of this material have been lacking and it is only in the past month or two that sales have been made. Prices remain unchanged from those quoted last week.

Bars, Plates and Shapes

Little improvement is noted in demand for merchant bars and tonnages offered are small lots of assorted sizes. Concrete bar awards this week exceed 700 tons and include 240 tons for a plant for the Sunset Printing Co., in San Francisco, and 210 tons for Durant school in San Francisco, placed with an unnamed jobber. While several jobs involving fair tonnages are up for figures the majority of the going business ranges from 20 to 50 tons.

Plate prices are becoming firmer and as far as can be ascertained 2.30c c.i.f. Coast ports is now the minimum figure applying on large and desirable lots with the usual small lot business bringing 2.35c. No awards of importance were noted this week, but pending business exceeds 5000 tons. Included among the new inquiries of the week is 300 tons for a pipe line for Carmichael, Calif.

Structural shape business up for figures and in sight calls for a heavy total, exceeding 35,000 tons. Most of this business, it is expected, will be closed during first quarter, presaging a record breaking year. Plans are being completed for a dam for the Kittitas division of the Yamkima (Washington) irrigation district involving close to 3000 tons of structural steel. Awards of the week totaled 4000 tons, among which was 1800 tons for the California-Montgomery building in San Francisco and 1500 tons for the Vantage Ferry bridge in Washington, both awarded to the United States Steel Products Co. The Pacific Coast Engineering Co. was awarded 164 tons for a mill addition to the Columbia Steel Corp. plant at Pittsburg, Calif. Prices are firm at 2.35c c.i.f. Pacific coast ports on larger lots with 2.40c applying on the usual run of the market.

While $50 base delivered on cast iron pipe continues the general figure, some business of late has brought out as low as $47 a ton. B. Nicoll & Co. was low bidder on 1300 tons for Glendale, Calif., as announced in the Dec. 24 issue at $62,170 but these bids were rejected and the pipe bought in the open market from Wm. H. Muller Co.

Included among rail and track specialties sales since the first of the year was 500 tons of 60-pound rails for an unnamed company placed with a Belgian mill and 959 tons of 56 to 65-pound relayers and 181 tons of angle bars for the Longview, Portland & Northern railway. No new developments are noted in regard to the proposed 100,000 ton purchase of T rails by the Southern Pacific Co. but it is expected this tonnage will come out for figures during first quarter.

Northwest Moves Slowly

SEATTLE, Jan. 7.—The market has not yet recovered from the holidays but there is a firm undertone and conditions are promising. There is nothing outstanding in iron and steel at the moment and buying is limited.

Considerable new construction has been announced during the past week and the indications are that building will be as active in this territory this year as in 1925. Portland, Tacoma, Spokane and other large cities in the northwest report record building totals for 1925.

Road and bridge work in Washington and Oregon will be active this year, indications pointing to good demand for structurals. The market for cast iron pipe is also promising as many municipalities are planning extensions or new water systems.

Pig Iron and Coke

The foundry business is quiet but spotted, some plants being fairly busy while others are practically idle. There is little immediate interest in pig iron as the trade is still well stocked. Quotations are unchanged from last month. Some foreign coke has been purchased, one lot of 500 tons of Westphalian being due here next month. The price is steady at $14.

Bars, Plates and Shapes

While the jobbing trade has been buying sparingly during inventory time, the local mill has a fair amount of work on hand and is operating at the same capacity as for several months. Considerable tie plate business is being turned out. The mill price on bars remains steady at 2.35c. Foreign bars are a negligible factor locally although imported steel at Portland is still disturbing the market there. The Pacific Coast Steel Co. has the subcontract for about 350 tons of reinforcing material for the new Skinner building, Seattle. The same firm will probably be awarded about 252 tons of reinforcing for the Vantage Ferry bridge. No other large jobs are immediately pending although several projects are to come up within a short time.

Plates and shapes are holding firm at 2.30c and 2.35c respectively, nothing under those levels being reported. Plates are moving in small tonnages. Hofius Steel & Equipment Co. has taken the contract for about 550 tons of structural steel for the new Skinner building, Seattle. Bids were opened yesterday for the state Vantage Ferry bridge near Ellensburg, Wash. Ten proposals were submitted, Kuckenburg & Wittman, Portland, being low bidders at $628,496. This project involves 252 tons of reinforcing, 1465 tons of structural steel, 34,000 pounds of bronze expansion bars and 27 tons of cast steel shoes. This bridge will be the largest in the state, 2475 feet in length.

Wallace Equipment Co., Seattle, has been awarded 112 tons of structural steel for the new plant of the Pacific Coast Forge Co. Bids will be opened Jan. 23 for the new state Masonic home, near Seattle, to cost $1,000,000.

Oregon State Highway commission Jan. 19 will open bids for a number of road projects involving several small bridges which will require a total of 70 tons metal reinforcement, 17 tons of structurals and 14 tons machinery.

Finished Materials

No great buying activity has developed since the holidays but the jobbing trade is reasonably good. Prices are unchanged and the market as a whole is firm. Plates, sheets, bars, tubing, shafting, nuts and bolts are in fair demand although the situation presents nothing outstanding.

The Market Section

British Markets Are Stronger

American Buyers Place Contracts for 5,000 Tons of Middlesbrough Iron—English Railroads Specify Domestic Steel—33,000 Tons of Rails Placed—Krupps Remain Out of Merger Plans

European Headquarters,
IRON TRADE REVIEW,
2-3 Caxton House, Westminster, S. W.1

LONDON, Jan. 12.—(*By Cable*)—A stronger and more confident tone is apparent in the British iron and steel markets. Among the week's transactions are sales of pig iron to Italy involving a good tonnage, while American interests have placed contracts for 5000 tons of pig iron for delivery from Middlesbrough.

Continental prices on steel are firmer. Some rerollers are finding it more profitable to buy continental semi-finished products. British railroads have decided to specify in all contracts the use of steel made in Britain. The London & Northeastern has placed an order for 33,000 tons of rails. The market for tin plate and galvanized sheets is easier.

The Paris correspondent of IRON TRADE REVIEW reports sales of French semifinished steel to British users. Sales of steel to Japan also are reported. Business is active. In Belgium floods are hampering operation of iron and steel works.

IRON TRADE REVIEW'S Berlin correspondent reports German exports are declining, except galvanized and plain wire. German quotations generally are lower.

Respecting the German-Ruhr steel combination that Dillon, Read & Co. of New York are reported to be organizing, it is said the Krupps are expected to remain out of it, but are ready to co-operate. Without the Krupps interests, the combination as projected would control about 41 per cent of the German steel output. It is believed a reduction of 5 marks per ton in cost of producing steel would result from a merger of the various interests mentioned.

British Steel Demand Better but Prices Lag

Office of IRON TRADE REVIEW,
Prince's Chambers, Corporation St.

BIRMINGHAM, Eng., Dec. 30.—(*European Staff Service*)—Christmas holiday week is invariably dull, stocktaking occupying a necessary share of attention. But mills are able to operate to the eve of holidays and in several of the northern mills rolling continues Friday and Saturday.

After much talk of higher prices on the Continent, accompanied as a rule by steadily descending quotations, latest prices show a marked advance. Joists have been increased by 1s ($0.24) tees by 2s ($0.48) and various descriptions of sheets by 6d ($0.12) per ton. A matter of more importance to this district is the rise in billet values which have been selling for some time at £5 5s ($25.56) delivered here. No contract is now accepted under £5 7s 6d ($26.06). Several of the Staffordshire re-rolling works have been accustomed to depend on this class of foreign steel and orders for some thousands of tons have been placed within the last week. It is now practically impossible to get prompt supplies from the Continent, 10 to 12 weeks being required to give delivery. There is an impression here that the Charleroi strike is approaching its termination and if these works should reopen additional supplies of Continental steel are looked for, as these works are understood to

(*Concluded on Page* 186)

Current Iron and Steel Prices of Europe

Dollars at Rates of Exchange, January 11	*British* Gross Tons U. K. Ports		*French* Metric Tons Channel Ports		*Belgium and Luxemburg* Metric Tons Channel Ports		*German* Metric Tons Rotterdam or North Sea Port	
Export Prices f. o. b. Ship at Port of Dispatch—By Cable								
PIG IRON	£ s d		Francs		Francs		£ s d	
Foundry No. 3, Silicon 2.50-3.00	$16.61	3 8 6*	$14.55	380	$14.76	325	$16.98	3 10 0
Basic	16.25	3 7 0	14.55	380	14.76	325	15.04	3 2 0
Basic-bessemer	18.67	3 17 0†	14.36	375	14.07	310	16.98	3 10 0
Hematite, Phosphoru s0.02-0.05	18.67	3 17 0	19.72	515	...	...	18.19	3 15 0
SEMIFINISHED STEEL								
Billets	$26.68	5 10 0	$21.83	570	$21.11	465	$24.25	5 0 0
Wire rods	44.86	9 5 0	28.15	735	28.38	625	27.16	5 12 0
FINISHED STEEL								
Standard rails	$35.16	7 5 0	$25.66	670	$29.06	640	$31.53	6 10 0
Merchant bars	1.52c	7 0 0	1.18c	680	1.17c	570	1.16c	5 5 0
Structural shapes	1.35c	6 5 0	1.08c	620	1.07c	520	1.10c	5 0 0
Plates, ship, bridge and tank	1.54c	7 2 6	1.21c	695	1.19c	580	1.27c	5 15 0
Sheets, black, 24 gage	2.22c	10 5 0	2.26c	1,300	2.20c	1,070	2.48c	11 5 0
Sheets, galvanized, 24 gage, corrugated	3.60c	16 12 6	3.31c	1,900	4.53c	2,200	3.63c	16 10 0
Bands and strips	2.27c	10 10 0	1.39c	800	1.49c	725	1.43c	6 10 0
Plain wire, base	2.38c	11 0 0	1.96c	1,150	1.75c	850	1.65c	7 10 0
Galvanized wire, base	3.03c	14 0 0	2.44c	1,400	2.27c	1,100	1.98c	9 0 0
Wire nails, base	3.14c	14 10 0	1.96c	1,125	1.85c	900	1.93c	8 15 0
Tin plate, base box 108 pounds	$ 4.73	0 19 6	.....	...	....	...	$ 6.55	1 7 0
Domestic Prices at Works or Furnace—Last Reported								Renten Marks
Foundry No. 3 Pig Iron, Silicon 2.50-3.00	$16.13	3 6 6	$14.06	367(2)	$14.30	315	$19.55	85
Basic pig iron	15.76	3 5 0	13.98	365(1)	14.07	310	20.24	88
Furnace coke	3.52	0 14 6	5.48	143	5.68	125	5.06	22
Billets	26.68	5 10 0	19.92	520	21.11	465	27.37	119
Standard rails	1.73c	8 0 0	1.06c	610	1.19c	580	1.48c	142
Merchant bars	1.57c	7 5 0	1.12c	645	1.21c	585	1.36c	130
Phapes	1.41c	6 10 0	1.04c	595	1.19c	580	1.37c	131
Blates, ship, bridge and tank	1.57c	7 5 0	1.37c	785	1.28c	625	1.48c	142
Sheets, black, 24 gage	2.27c	10 10 0	2.19c	1,260	2.17c	1,055	2.14c	205
Sheets, galvanized, 24 gage, corrugated	3.60c	16 12 6	3.22c	1,850	4.64c	2,250	3.55c	340
Plain wire	2.38c	11 0 0	1.62c	930	1.75c	850	1.77c	170
Bands and Strips	2.22c	10 5 0	1.36c	780	1.49c	725	1.56c	150

*Middlesbrough; †Scotch foundry iron; (1) Basic-bessemer; (2) Longwy. British export furnace coke £0 16s 0d ($3.88) f. o. b. Ferromanganese £15 5s 0d ($73.96) f. o. b. German ferromanganese £14 0s 0d ($67.90) f. o. b.

The equivalent prices in American currency are in dollars per ton for pig iron, coke, semi-finished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel; French, Belgian, Luxemburg and German are for basic bessemer steel.

Machinery

Buying Gets Off to Good Start—Railroads Give Promise of Substantial Purchases—Illinois Central, Issues Substantial List

PRACTICALLY all lines of machine tools and equipment have made a good start in the new year. Sales have been up to the level of the last part of December and inquiries indicate continued activity. Most encouraging is the promise of railroad buying this year. Favorable earnings in 1925 will enable carriers to replace obsolete tools and to purchase new. One of the first inquiries of the year was a list of over 130 tools by the Illinois Central and during the past week this inquiry was expanded to include over 150 machines. New York Central is asking prices on a number of miscellaneous tools. Other roads expected to enter the market are the Boston & Maine, Boston & Albany and Florida East Coast. Buying by the automobile industry continues to hold up.

New York, Jan. 12.—Railroad demand is a promising feature of the local tool market. New York Central is inquiring for 13 or 14 machine tools for various shops, including several shapers and grinders, with reports abroad of a forthcoming substantial list for its Harmon, N. Y., shops, to facilitate the repair of diesel electric engines. Boston & Maine and Boston & Albany are expected to bring out lists shortly. Pennsylvania railroad contemplates fabricating equipment for its shops at Olean, N. Y., while Florida East Coast, recently a heavy buyer of car shop equipment, may become a substantial purchaser of equipment for locomotive repair shops at St. Augustine, Fla. Included in current railroad buying is a shaper for the Central of New Jersey shops at Ashley, Pa., a 90-inch driving wheel lathe for the Great Northern and a 400-ton double-end wheel press for the Canadian National railways, the latter two orders going to Niles-Bement-Pont Co. An active industrial buyer is Otis Elevator Co., covering on equipment for a motor production shop at Yonkers, N. Y. Newport News Shipbuilding & Dry Dock Co., Newport News, Va., has closed on five punching machines. General Electric Co. is inquiring for a number of machines for Schenectady, including nine screw machines, several lathes and a heavy plate bending roll. Bethlehem Steel Co. is inquiring for several shapers and special production machines for its Johnstown, Pa., plant and has just purchased six additional wiremaking machines for Sparrows Point. This brings to 130 the total number of these machines bought over the last few months.

Pittsburgh, Jan. 12.—Equipment markets are starting 1926 in a fairly active manner, orders mostly being for single tools. Youngstown Sheet & Tube Co., however, has completed the purchase of its 15 or 20 items for Indiana Harbor, some orders going to Cleveland dealers and one or two coming here, including one for drilling machines taken by William K. Stamets. A list is expected shortly from Union Switch & Signal Co., Swissvale, Pa., closing on a crane this week. Trade school machine tool lists also are pending.

Cleveland, Jan. 12.—Dealers report that the new year has made a good start with satisfactory sales and inquiries. As has been the case for some time, however, orders are for single tools and are scattered over considerable territory. Manufacturers, on the other hand, indicate a falling off in business but feel confident that before the month is over sales will be bolstered up. Automotive interests in Detroit continue heavy buying. Used equipment still enjoys a healthy demand.

Cincinnati, Jan. 12.—Machine tool interests here are booking a fair volume of orders but mostly involving single tools. Except for one or two plants in the Oakley district, operations are at 100 per cent capacity, while plant operations generally average 75 per cent. Inquiries are better, particularly from automotive plants. Railroads are buying less than for several months, but are expected to be more active next month. Cincinnati Planer Co. reported the sale of a 42-inch planer to a Louisville manufacturer. Niles Tool Works sold a 30-inch lathe, while Cincinnati Milling Machine Co. and Morris Machine Tool Co., booked several orders involving single tools.

Chicago, Jan. 12.—More than 150 separate tools are now on the Illinois Central list for its new shops at Paducah, Ky., additions of the past few

CRANE ORDERS PLACED

Twelve 2-5-ton overhead cranes for Otis Elevator Co., Yonkers, N. Y., to Harnischfeger Corp.

Eight fixed, three movable gate hoists for Sanderson & Porter, New York, to D. J. Murray, Wausau, Wis.

Six crawler cranes for Cranford Construction Co., New York, to Northwest Engineering Co.

Three 2-ton floor controlled electric cranes for West Virginia Pulp & Paper Co., New York, to unnamed builder; one for Mechanicsville, N. Y., two for Williamsburg, Pa.

Three special locomotive cranes, ditching attachments, for Great Northern railroad, to American Hoist & Derrick Co.

Three cranes for Koppers Co., Pittsburgh, for shipping to different points, to Shaw Electric Crane Works, Muskegon, Mich., through Manning, Maxwell & Moore, Inc., Pittsburgh.

Two electric overhead cranes, one 20-ton and one 10-ton, for De Laval Steam Turbine Co., Trenton, N. J., to Shaw Electric Crane Co.

Two 2-ton handpower traveling cranes for Standard Oil Co., San Francisco, to Cyclops Iron Works.

Two 2-5-ton overhead cranes for Otis Elevator Co., Yonkers, N. Y., additions, to Shepard Electric Crane & Hoist Co.

Two locomotive cranes for Boullout & Ewyn Co., New Orleans, to American Hoist & Derrick Co.

Two electric overhead cranes for Florence Pipe, Foundry & Machine Co., Florence, N. J., to Harnischfeger Corp.

Two gasoline electric shovels for Silas B. Mason, New York, contractor, to Marion Steam Shovel Co.

Two crawler cranes for Del Blasto Construction Co., to Brown Hoisting Machinery Co.

Single awards include: 75-ton crane for Western United Gas & Electric Co., Aurora, Ill., to Niles-Bement-Pond Co., through Stone & Webster, engineers; 50-ton coach hoist for Erie railroad shops, Kent, O., to Whiting Corp.; 40-ton locomotive crane for new municipal pier, San Diego, Calif.; to Brown Hoisting Machinery Co.; 30-ton used locomotive crane for Western Sand Co., Columbus, O., to Philip T. King, New York; 25-ton gasoline crawler crane for Missouri Portland Cement Co., St. Louis, to American Hoist & Derrick Co.; 25-ton locomotive crane for Simms Construction Co., Philadelphia, to Browning Crane Co.; 18-ton electric overhead crane for Harmon, N. Y., shops of New York Central, to Cleveland Crane & Engineering Co.; 15-ton crane for Mesta Machine Co., Pittsburgh, to Alliance Machine Co.; 12-18-ton gasoline locomotive crane for unnamed Chicago scrap interest, to Orton & Steinbrenner Co.; 10-ton electric crane for Norfolk & Western shops, Roanoke, Va., to Northern Engineering Works; 10-ton double trolley crane for Ingalls Iron Works, Birmingham, Ala., to Niles-Bement-Pond Co.; 10-ton electric grab bucket crane for Hercules Cement Co., Nazareth, Pa., to Niles-Bement-Pond Co.; 10-ton electric crane for city of Dayton, O., to Whiting Corp.; 7½-ton traveling crane for Kulmann Saltz Co., Benicia, Calif., to Cyclops Iron Works; 200-foot monorail with several hoists for Rubberoid Co., Bound Brook, N. J., hoists to American Engineering Co., monorail equipment to New Jersey Foundry & Equipment Co.; steel jib crane for Northern Pacific railroad to American Hoist & Derrick Co.; 15-ton used locomotive crane for John C. Orr Lumber Co., Brooklyn, to Philip T. King, New York.

CRANE ORDERS PENDING

Two 75-ton traveling cranes for San Joaquin Light & Power Co., Fresno, Calif.; bids opened.

Two electric cranes, one 10-ton and one 3-ton for Pennsylvania railroad shops, Olean, N. Y.; bids asked.

Single jobs pending: 5-ton crane for Union Switch & Signal Co., Swissvale, Pa., to be placed this week; 5-ton traveling crane for a Sacramento, Calif., plant of Great Western Power Co., asking figures; crawler cranes for Silas B. Mason, New York, contractor, contemplated.

days including 6 planers, 5 plate punches and 3 plate shears. New York Central is inquiring for several floor grinders. Chicago board of education will buy a No. 4 hack saw. Several Milwaukee drop forge interests should close shortly on additional equipment. Considerable inquiry has come out this month, indicating confidence in business by some large manufacturing interests here.

Unfilled Tonnage Gains

For the fifth consecutive month unfilled bookings of the United States Steel Corp., as of Dec. 31, have shown a gain, amounting to 5,033,364 tons. This is the largest total since February 1925, when unfilled bookings totaled 5,284,771. The increase is 451,584 tons or 9.8 per cent. Further comparisons follow:

Date	Total	Change, tonnage	Change, per cent	
Dec. 31, 1925	5,033,364	451,584	+ 9.8	+
Nov. 30, 1925	4,581,780	472,597	+11.5	+
Oct. 31, 1925	4,109,183	391,886	+ 9.5	+
Sept. 30, 1925	3,717,297	204,494	+ 5.8	+
Aug. 31, 1925	3,512,803	26,664	— 0.756	—
July 31, 1925	3,539,467	170,991	— 4.6	—
June 30, 1925	3,710,458	339,342	— 8.3	—
May 31, 1925	4,049,800	396,768	— 8.4	—
Apr. 30, 1925	4,446,568	416,996	— 8.6	—
Mar. 31, 1925	4,863,564	421,207	— 7.0	—
Feb. 28, 1925	5,284,771	247,488	+ 4.8	+
Jan. 31, 1924	5,037,323	220,647	+ 4.58	+
Dec. 31, 1924	4,816,676	784,707	+19.1	+
Nov. 30, 1924	4,031,969	506,699	+14.3	+
Oct. 31, 1924	3,525,270	51,490	+ 1.48	+
Sept. 30, 1924	3,473,780	184,203	+ 5.59	+
Aug. 31, 1924	3,289,577	102,505	+ 3.02	+
July 31, 1924	3,187,072	75,433	— 2.3	—
June 30, 1924	3,262,505	365,584	—11.1	—
May 31, 1924	3,628,089	580,358	—13.79	—
April 30, 1924	4,208,447	574,360	—12.008	—
Mar. 31, 1924	4,782,807	130,094	— 2.6	—
Feb. 29, 1924	4,912,901	114,472	+ 2.3	+
Jan. 31, 1924	4,798,429	350,183	+ 7.8	+

Rail Equipment Active

(*Concluded from Page* 166)

Union Pacific, nine, to the American Locomotive Co.

Mobile & Ohio, nine to the Baldwin Locomotive Works.

Gulf, Mobile & Ohio, nine, to the Baldwin Locomotive Works.

Potlatch Lumber Co., one, to Baldwin Locomotive Works.

New York, New Haven & Hartford, 10 electric locomotives, to General Electric Co. and American Locomotive Co.

Railroad in Cuba, three electric locomotives, to International General Electric Co.

Railroad in Mexico, two electric locomotives, to International General Electric Co.

Railroad in Japan, two electric locomotives, to International General Electric Co.

ORDERS PENDING

Nashville, Chattanooga & St. Louis, 100 ballast cars and 75 flat cars, pending; also four baggage cars.

American Tar Products Co., 50 tank cars; pending.

Missouri Pacific, 600 box car bodies, with repairs to trucks, and 50 gondolas; pending.

Chicago, Burlington & Quincy, 1000 box cars; inquiry revised from 1500.

St. Louis Southwestern, 26 caboose underframes; pending.

Oliver Iron Mining Co., 50 ore cars; bids asked.

Fruit Growers' Express, 300 underframes; pending.

Jones & Laughlin Steel Corp., 16 tank cars; pending.

Great Northern, 1000 automobile cars; contemplated.

South African railway, 25 gondolas; pending.

Soo Line, 500 box cars; pending.

Swift & Co., 300 underframes; pending.

Illinois Central, 2500-3000 additional gondola, automobile and furniture cars, and some passenger equipment; contemplated.

Agree on Abolishment of Rail Labor Board

Washington, Jan. 12.—President Coolidge has been advised by representatives of railroad executives and railroad labor unions that agreement has been reached by committees on a bill abolishing the railroad labor board, and which would set up a system for the adjustment of disputes.

As it has been agreed upon, the bill provides for settlements of disputes by conference, and if they cannot thus be settled, disputes other than those relating to fixing rates of pay would go before adjustment boards to be set up by the railroad and the employes. If disputes then cannot be settled they would go before a board of mediation provided for in the bill.

In case the mediation board would fail to effect a settlement, provision then is made for voluntary arbitration. This failing to settle the dispute, the President, under the bill, would be authorized to appoint a fact-finding board, which would investigate and submit a report to the President, who would publish the findings of the board, pending which the employes would agree not to strike.

The bill has some provisions similar to those of the Howell-Barkley bill, which met defeat in the sixty-eighth congress, but substantial changes have been made to remove objections in the former bill. The committee of the railroad managements and that of the labor unions have been conferring to put the bill into final shape.

Strip Producer Orders Annealing Units

Five recuperative box annealing furnaces have been ordered by the Acme Steel Co. from the Chapman-Stein Furnace Co., Mt. Vernon, O. for bright annealing cold rolled strip at its Riverdale, Ill. plant. The units represent additional plant capacity and will take the product from the company's new strip mill. The slabs for the mill are heated in two Chapman-Stein continuous recuperative heating furnaces. The Acme company also is installing a Chapman type mechanical gas producer, complete gas flue system, stacks, coal-handling equipment and a new building.

Friendly Receivership For Eastern Steel

In a friendly suit to conserve assets worth nearly $12,000,000 and protect them against depreciation because of a temporary financial embarrassment, Judge Dickinson, in the United States district court at Philadelphia, Jan. 8, appointed Edward L. Herndon as receiver in equity for the Eastern Steel Co. According to the bill in equity filed by W. J. Rainey, Inc., a creditor for $45,605, the difficulty of the company is due to lack of cash. It was stated that the company has assets valued at $11,790,000, whereas the comany's debts are $4,780,000. On this basis, the bill declares, the company is solvent.

Employment and Payrolls Gained in November

Washington, Jan. 12.—Employment in the iron and steel industry gained 1.5 per cent in November compared with October, while payroll totals increased four-tenths of 1 per cent. In the foundry and machine shop products group employment gained nine-tenths of 1 per cent while payroll totals increased 1.8 per cent. In the machine tool group the gain in employment reached 4 per cent, while the payroll total advanced 4.3 per cent.

Employment in manufacturing industries of the country as a whole increased two-tenths of 1 per cent in November, making the fourth successive month of increased employment. Payroll totals generally, as was shown by reports from 9405 establishments in 53 industries, gained four-tenths of 1 per cent, and per capita earnings increased two-tenths of 1 per cent.

Rates on Tank Material Held Unreasonable

Washington, Jan. 12.—Holding that rates on steel tank material shipped in carloads from points in Pennsylvania, Ohio, Illinois, Indiana and Missouri to destinations in Oklahoma and Texas were unreasonable as complained of by the Sinclair Crude Oil Producing Co., joined by several other shippers, Examiner Alfred S. Knowlton in a report to the interstate commerce commission recommended that such rates be no higher than the rates on iron and steel pipe.

Conditions in the industries using tank material were declared by the examiner to have changed in recent years, causing the volume of the movement to increase to a large extent.

Foundry Orders Increase

Washington, Jan. 12.—Unfilled orders for foundry equipment showed a gain at the end of November, 1925, over both October 1925 and November, 1924. The value of these bookings, as reported to the department of commerce, was $593,456 for November, $518,795 at the end of October, and $399,325 at the end of November, 1924. November 1925 shipments were valued at $414,148, showing a gain over the total of $400,646 in October, and the valuation of $203,558 for November, 1924. Sales amounted to $480,328 in November, as against $424,054 in October, and $284,617 in November, 1924.

Navy To Build Two Boats

Washington, Jan. 12.—Specifications have been issued calling for bids to be opened March 1 at the navy department for awarding contracts for steel to be used in a light battle cruiser to be built directly under contract, and for another of similar type to be built at the navy yard in Brooklyn. Each of these vessels will require about 4000 tons of plates and structurals, not including the tonnages of special treatment for steel armor purposes.

Mileage Scale

Attacked by Railroads, Asking for Reopening of Case

Washington, Jan. 12.—Joining in the application for reopening of the Jones & Laughlin Steel Corp. case, the Baltimore & Ohio and 25 other railroads, defendants in the case, charge, in a petition that has been filed with the interstate commerce commission, that the mileage scale as a basis for freight rates on iron and steel shipped from the Pittsburgh district to St. Louis has opened the way for numerous applications for lower rates from other points not at issue.

A reopening of the case has been asked by the Jones & Laughlin corporation. The report of the commission last April proposed to readjust the rates from Pittsburgh to Indiana and Illinois points, and to St. Louis.

It is stated in the petition of the railroads that if full effect were given the suggestion that other fifth-class rates not in issue in the case are to be adjusted in conformity with the mileage scale, it is estimated that the carriers would require about $37,500,000 additional business to obtain the same net earnings as under the present rates. The consumption of iron and steel "could not possibly be increased anything like that amount," it is concluded. The petition states:

"At a public hearing following the decision, certain representatives of iron and steel shippers and receivers in Indiana and Illinois announced that they would not be satisfied with the application of the present mileage scale but would demand a lower basis of rates than that prescribed. In view of the widespread demands that the mileage scale be applied generally throughout Central Freight association territory, where higher rates now prevail, it is apparent that the carriers are confronted with a serious situation, which will result in an enormous loss of revenue if they comply with these demands."

The petition further states the fears of the carriers are fully justified in recent tentative reports of examiners of the interstate commerce commission in at least six cases in which the application of the Jones & Laughlin mileage scale is proposed. Among these cases are the Johnstown chamber of commerce case, involving steel rates to eastern points; the National Car & Coupler Co. case, two cases of the Knoxville Iron Co., and the Alan Wood Iron & Steel Co. case.

American railroads operated 11,250,000 locomotive miles in 1924 before a single passenger was killed, and 270,000 miles before one was injured, according to Arthur Williams vice president of commercial relations of the New York Edison Co. and president of the American Museum of Safety, New York. In 1914 one passenger was killed for every 6,620,000 locomotive miles of operation and one injured for every 116,000.

McKinney Steel Co. Shuts Open Hearths

Cleveland, Jan. 12.—After operating its 14 open-hearths through the greater part of 1925 practically at capacity, the McKinney Steel Co. has closed them temporarily. The shutdown is likely to continue for ten days. The blooming, sheet bar and billet mills are operating on reduced schedules. Coke oven and blast furnace operation of the company have not been affected as yet.

The suspension is due to lack of specifications, following exceptionally heavy shipments during the last quarter of 1925. Although the company was reported to have sufficient business on its books for full operation through the first quarter, specifications did not come in after the first of the year as anticipated, due to curtailment of operations by a number of consuming plants during the holiday and inventory season.

It was stated that practically the entire steel department of the plant was shut down, and the company will make repairs.

Midland Moves Offices

St. Louis, Jan. 11.—The Midland Coke & Iron Co., formerly the St. Louis Coke & Iron Co., has, effective Jan. 1, removed its general offices from Granite City to Chicago. The sales, raw material and traffic departments, which heretofore were located in St. Louis are also taken to Chicago.

Officials at Chicago will be Leonard A. Busby, chairman of the board; W. G. Maguire, president; A. J. Mann, treasurer; P. B. Nelson, secretary; W. G. Strom, traffic manager; Walter H Underwood, general sales manager and F. R. Johnson, manager of raw materials department.

M. D. Curran, vice president and general manager, will be in charge of the plant and properties at Granite City. George F. Vosberg has been made general superintendent and William Sloss, assistant superintendent at Granite City. The St. Louis sales office will be in charge of Edward Gross, district representative, and Charles J. Scullin. The branch sales office at Davenport, Iowa, has been discontinued.

Rates on Northern Ohio Pig Iron Equalized

Northern Ohio pig iron producers, especially those located at Toledo, Lorain and Cleveland, have been granted lower railroad freight rates to interior Ohio and Indiana points which will tend to equalize competing pig iron rates from southern Ohio. New York Central Lines published the new rates for interstate and intrastate traffic, effective Jan. 7. On one day's notice the Wheeling & Lake Erie railroad published similar rates from Cleveland, Canton and Massillon, O., effective on intrastate rates on Jan. 10, and on interstate rates effective Feb. 10.

The new rates, which include readjustments ranging from 12 to 38 cents a ton, together with the old rates and the number of actual miles from shipping to consuming point, follow:

	Old	New	Mile
Toledo to Columbus	$2.27	$2.10	124
Ironton to Columbus	189	.....	127
Toledo to Dayton	2.39	2.27	143
Ironton to Dayton	2.27	.....	158
Toledo to Cincinnati	2.65	2.65	203
Cleveland to Columbus	2.27	2.10	138
Cleveland to Cincinnati	3.28	2.90	244
Cleveland to Indianapolis	3.53	3.15	284
Toledo to Indianapolis	2.90	2.90	222
Toledo to Battle Creek, Mich.	2.65	2.50	116

Rates from Canton and Massillon to these typical points are the same as from Cleveland to those points. The rate from Toledo to Fort Wayne, Ind., 95 miles, is $2.02, against the old rate of $2.27, and is 25 cents a ton below the rate from Detroit. To Michigan City, Ind., the new rate from Toledo is $2.90, against the old rate of $3.15 or is the same as from Detroit.

The understanding is that southern Ohio blast furnace interests will undertake to obtain similar revisions from the Baltimore & Ohio, Norfolk & Western and Chesapeake & Ohio railroads serving that portion of the state. So far nothing has been done about revising the rates from Columbus or Detroit.

Standardize Gage Limits

The first report of the sectional committee on standardization of plain limit gages for general engineering work has been approved by the council of the American Society of Mechanical Engineers and has been published in pamphlet form. This report covers the fundamentals of gaging plain-parallel and cylindrical surfaces, definitions, classifications of fits and tables of standard limits covering diameters from 0 to 7½ inches. The illustrated pamphlet may be obtained from the society's publication sales department, 29 West 39th street, New York.

Tool Builders Foresee a Busy Year Ahead

(*Continued from Page* 146)

ened ordering of machine tools.

During the last part of 1925 automobile manufacturers were substantial buyers of new equipment in preparation for a 1926 car building program which will eclipse that of last year. It would seem that the bulk of this buying for expansion probably has been completed and that as the year moves on, the bulk of buying will be for replacement. Furthermore, economists express some doubt that this country, or the world, can absorb the number of motor cars scheduled for manufacture this year. Should this be true, equipment buying from this direction will be curtailed.

Railroads May Buy Tools

General industry shows no sign of letup at present and a satisfactory volume of busines is expected from that source. One of the encouraging factors is improved buying by the railroads. Satisfactory earnings gained through increased freight and passenger traffic in 1925, has placed the carriers in a more favorable position to purchase new rolling stock and to repair old. Considerable machine tool equipment would be required for maintenance work. It is a well-known fact that much railroad shop equipment is obsolete. Therefore, tool builders are hopeful that railroad buying will materialize and already have been heartened by certain indications that it will. Before the year was one week old one large railroad issued a list for over 150 separate tools.

In spite of numerous indications that heavy tool buying will provide good operations through the year, tool builders are proceeding cautiously. Production schedules are being kept tuned up for high output yet a watchful eye is maintained to see that stocks are not permitted to get too far ahead of sales. Engineering forces are constantly working to perfect present models of equipment and to design new units of higher productivity and efficiency. Several of the new machines which were announced during December and the early part of January are described in the accompanying digest.

In the heavier class of equipment is a locomotive frame slotter designed by the Betts Works of the Consolidated Machine Tool Corp. and described as No. 1. While the unit shown has two heads, one, two or three-head models may be supplied as desired. A principal feature of the machine is that electrical rather than mechanical action is employed for driving, feeding and traversing. Each yoke has a separate electric feed and power rapid traverse along the bed, the drive being by a motor mounted on each yoke. The yokes also have fine adjustment by means of a large handwheel.

Wide Speed Range Provided

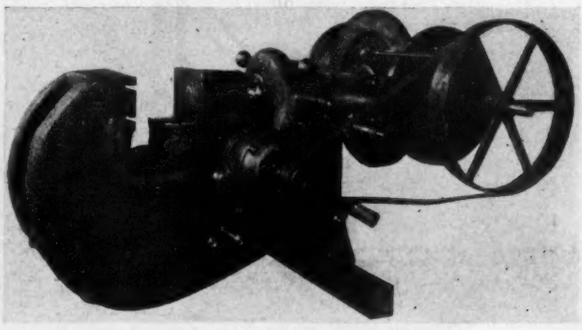
Crossrails are arranged with both hand and power swiveling movement for angular slotting. Each saddle has electric feed and power rapid traverse, also a hand adjustment along the crossrail. The motor, driving feed and power rapid traverse to the yoke perform the same functions for the saddles. Both yoke and saddle feed may be engaged simultaneously for angular slotting. Each ram is driven by a 20-horsepower reversing motor having a high return speed ratio. Cutting and return speeds are independently adjustable by means of separate rheostats for each and these give a wide range of speeds. Push button control for stopping, reversing, inching, etc., is available for all motors.

Another interesting and unusual machine just announced is the traveling head roll wabble planer built by the Morton Mfg. Co. and described

Power Press Is Horizontal Type

No. 3

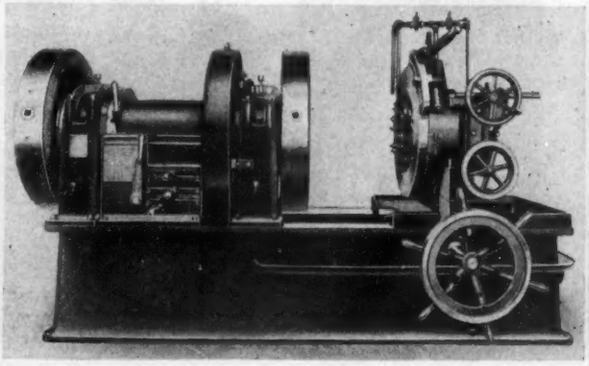
Zeh & Hahnemann Co., Newark, N. J., recently has brought out a new type patent percussion power press, arranged to meet conditions in plants manufacturing industrial railway equipment. This press is constructed to yield normally a pressure of 100 tons. A horizontal arrangement permits the work suspended by a runway to pass freely through the press for riveting operations, several rivets being headed cold at each stroke. A direct-connected motor, which can be arranged for belt drive, operates the press, which has a spacious gap or throat and is controlled by foot treadle similar to the ordinary type. The machine stops positively at the end of the reverse stroke and is held there by means of a brake, friction disks being in neutral position. At the end of the 10-inch working stroke, an emergency stop is provided in case the empty press should be tripped.



New Pipe Machine Has Wide Range

No. 4

Landis Machine Co., Waynesboro, Pa., is placing on the market a new 8-inch pipe threading and cutting machine with a range from 2½ to 8 inches. Two die heads, one 4 inch and one 8 inch, are used. Carriage travel is 24¾ inches under 8 speeds. The gear box is beneath the main spindle and all gears are of steel and are cut and run in an oil bath. A forced feed system lubricates the shaft bearings automatically. Front and rear gripping chucks have universal adjustment and are self-centering to the pipe. The rear chuck has flange grips, and both chucks have three jaws. A reverse drive in the gear box is used for putting on and taking off flanges. All levers are located conveniently on the operating side. The machine is 9 feet 3 inches long by 4 feet 9¾ inches wide and weighs, belt driven, 9750 pounds.



Horizontal Driller Is 6-Spindle

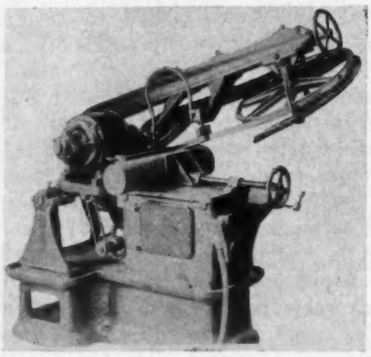
No. 5

Kent Machine Co., Kent, O., is manufacturing a semiautomatic and horizontal 6-spindle driller, designed for drilling holes in bolts, pins and similar pieces. On the drill table are 12 fixtures so located that six operate at once, directly in front of the six drill spindles with work automatically clamped in place, while the other six fixtures automatically unclamp. An automatic table shift takes place when the drill is completed. Shifting is accomplished through camshaft and feed cam so arranged that table movement is rapid until the spindle is about to enter the work, when it slows down to the proper feed for the given speed and drill diameter. Drill spindles of heat treated steel run in hardened and ground tool steel bearings, and are driven by a single horizontal shaft. The machine has a capacity of 3/64 to ¼ inch and spindle speeds of 1500, 1950 and 2600 revolutions per minute.

Band Saw Feeds Self Mechanically

No. 7

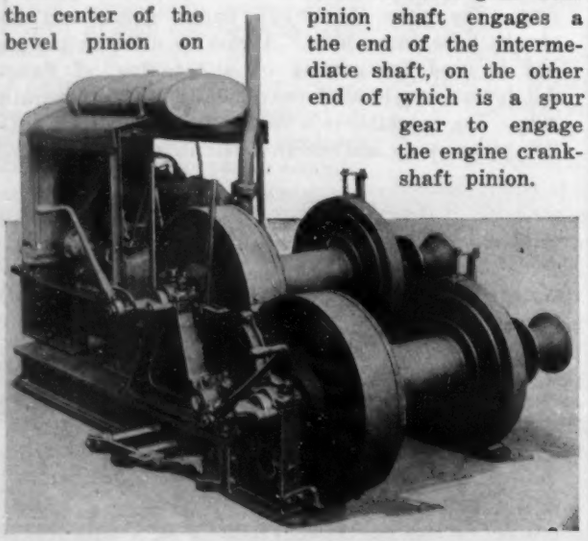
The metal Saw & Machine Co., Inc., Springfield, Mass., is producing a new metal cutting band saw with a cutting head or arm which by its own weight feeds the saw continuously into the work instead of the usual method of feeding the work into the saw. This unique action is made possible by the use of a horizontal instead of a vertical arm. Weight of the horizontal cutting head is counterbalanced by a powerful spring which gives an automatic variable feed pressure to compensate hardness differences in the work. This characteristic saves the blade and gives a straight cut regardless of stock variations. Constant attention from the operator is materially reduced after the material is firmly in the vise. A high rate of speed is possible because the blade travels in the cutting direction only, while the pressure adjustment gives a smooth, even and vibrationless movement. Its accuracy and speed make the saw adaptable for work on disks, billets, structural and cast iron alloy steels, pipe, tubing, brass and other metal work.



Gear Drive Is Employed on Hoist

No. 6

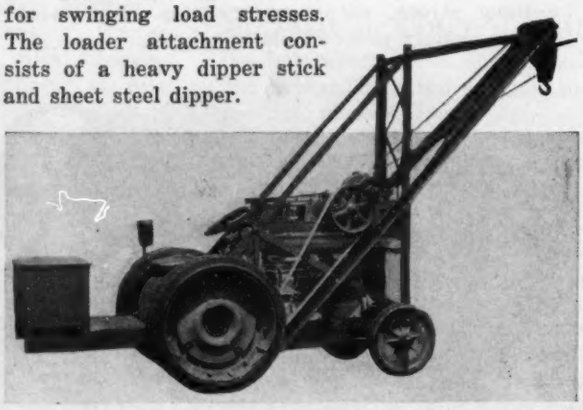
American Hoist & Derrick Co., St. Paul, recently has redesigned its gasoline hoist, substituting gear for chain drive. This change transmits power directly to the pinion shaft between the two rear drums, and thence to the friction gears by at least two teeth, one to each adjoining friction gear. The new hoists are driven by spur and bevel gears, with an intermediate longitudinal shaft supported by heavy babbitted boxes and at right angles with the pinion shaft, the gasoline motor being mounted lengthwise instead of crosswise. A bevel gear near the center of the pinion shaft engages a bevel pinion on the end of the intermediate shaft, on the other end of which is a spur gear to engage the engine crankshaft pinion.



Hoist and Loader Is Convertible

No. 8

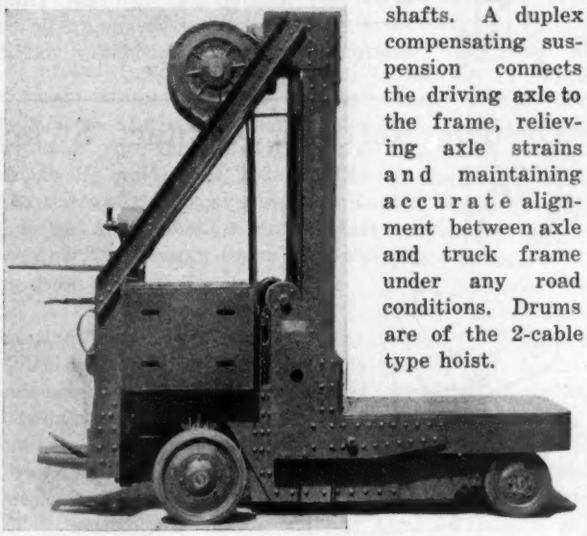
The Squier-Rix Co., Milwaukee, has developed a convertible hoist and loader which uses a tractor made by the Ford Motor Co. Hoists are built with lifts of 5, 8, 10, 12 and 14 feet. An automatic load brake in the hoisting mechanism holds the load instantly when power is released, thus preventing the possibility of dropping. A limit switch prevents overhoisting. This switch automatically throws out control when the load is raised to the proper height. A ballast box relieves front wheel and axle pressure and adds counterbalance. Hook travel is 23 feet per minute. To hoist and lower maximum loads, only 10 horsepower of the traction is utilized. Bucket filling action comes through the forward movement of the tractor and circular movement of the dipper in hoisting. Boom structure is rigid bridge type to care for swinging load stresses. The loader attachment consists of a heavy dipper stick and sheet steel dipper.



Truck Moves and Stacks Material

No. 9

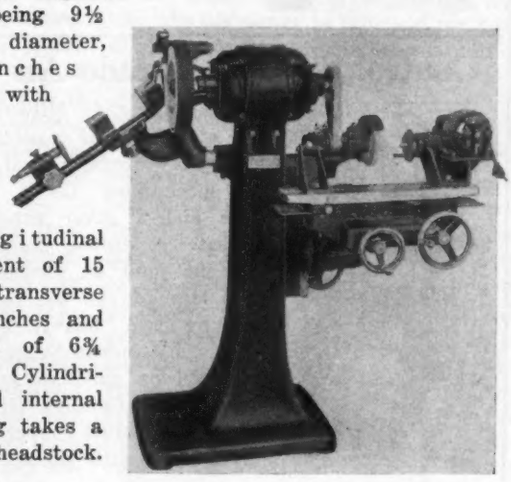
The Baker R & L Co., Cleveland, has placed on the market a new 6-ton electric industrial truck designed for handling and stacking heavy loads. Two 8-inch and two 9-inch channels, tied together by a 1-inch gusset plate, form the main frame. The roller frame is fabricated from four 1-inch plates with the 5/8-inch steel platform carried by four 8-inch channels. Roller carriage runs on a vertical track of two 8-inch nickel steel I-beams. A series-wound motor completely enclosed furnishes power through worm reduction and full floating axle shafts. A duplex compensating suspension connects the driving axle to the frame, relieving axle strains and maintaining accurate alignment between axle and truck frame under any road conditions. Drums are of the 2-cable type hoist.



Drill Grinder Given Motor Drive

No. 11

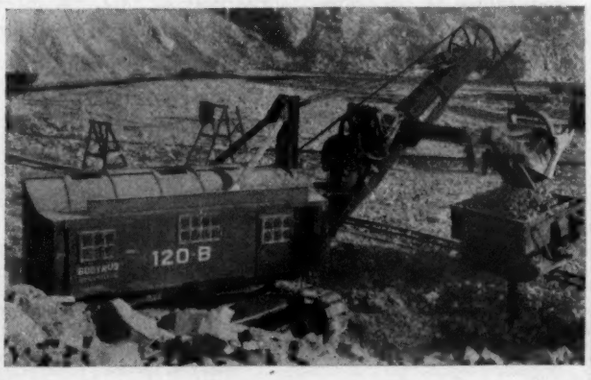
Gallmeyer & Livingston Co., Grand Rapids, Mich., recently has redesigned its combination drill, cutter and reamer grinder to provide for a motor drive, thus eliminating overhead works. The drill grinding wheel is mounted directly on the armature or rotor shaft, with a special bearing for absorbing end play. The other end of the motor is utilized for driving the cutter and reamer grinding wheel spindle on an endless belt, providing the increased speed necessary. Straight or cup wheels may be used and straight or taper work handled. Longitudinal, transverse and vertical features are controlled by handwheel, the maximum capacities being 9½ inches diameter, 20 inches length with a longitudinal movement of 15 inches, transverse of 7 inches and vertical of 6¾ inches. Cylindrical and internal grinding takes a motor headstock.



Improves Heavy Duty Steam Shovel

No. 10

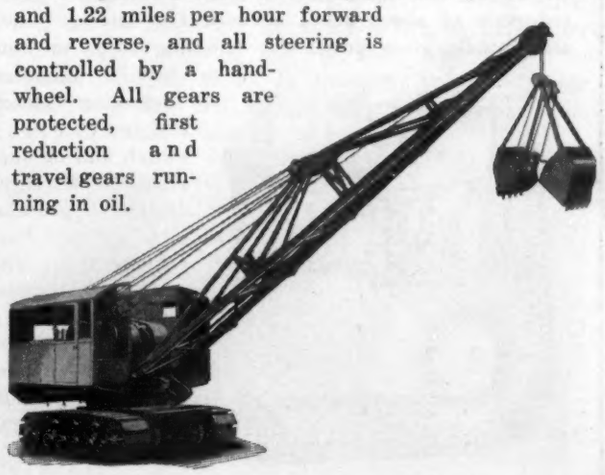
Bucyrus Co., South Milwaukee, Wis., has placed on the market a new 4-yard steam shovel, built to combine advantages of both the railroad and the full revolving types. The five principal improvements claimed for this machine are: 1. Speed of action of the railroad type shovel; 2. mobility of single truck caterpillars; 3. full revolving swing; 4. big dipper capacity, and 5. ruggedness and power. The machine has a dumping height of 20 feet and radius of 36 feet. The boom is 29 feet long, the rear end radius 17 feet. This radius eliminates the railroad type shortcoming of working close to a bank and of having a limited digging and dumping radius. Other new features included as standard equipment consist of fire brick arch and superheater. The electric machine is equipped with direct current and generator field control.



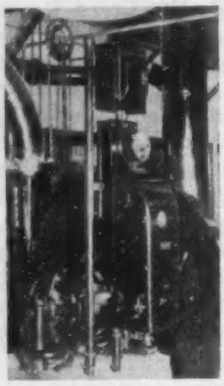
Announces New Type of Excavator

No. 12

Harnischfeger Corp., Milwaukee, has developed a new type excavator requiring a 77-horsepower motor. The machine handles a 1-cubic yard dragline or clamshell bucket on a 40-foot boom with a rated lifting capacity of 33,000 pounds at a 10-foot radius. Standard line speed for clamshell and shovel operation is 156 feet per minute, for dragline 116. Shovel boom is of standard design, the crowding motion driven through a thimble roller chain from the front drum. Two main drums, independently mounted on separate shafts, are controlled by outside band clutches and brakes. Revolving and car body frames are cast steel in one piece. Two traction speeds are possible, 0.4 and 1.22 miles per hour forward and reverse, and all steering is controlled by a handwheel. All gears are protected, first reduction and travel gears running in oil.



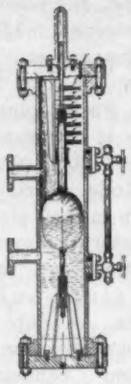
Compresses Air for Oil Burning



No. 13

General Electric Co., Schenectady, N. Y., is marketing a new design centrifugal compressor for supplying air to oil burning furnaces at a rate of 1800 cubic feet per minute under 1½ pounds per square inch pressure. It operates at 3450 revolutions per minute, direct connected to a 20-horsepower induction motor at 3600 revolutions per minute. A scale indicates the air supply.

Device Shows Boiler Water Level



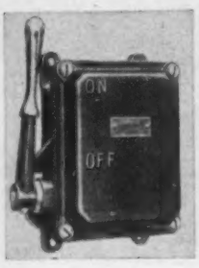
No. 16

The W. B. Connor Co., Inc., New York, has placed on the market a boiler water column containing a steel guided float level indicator. This float actuates the indicating medium, a series of low voltage transformers located in the steam space of the column and connected to a corresponding series of lights on a panel. These lights are dim but burn brightly when a floating armature, passing through the transformer fields, changes the magnetic circui and increases the secondary voltage.

Control Switch Is Made Air Tight

No. 14

Cutler-Hammer Mfg. Co., Milwaukee, has brought out an electrical remote control station which is watertight and acid resisting. The mechanism has a cast iron case and a cover fitted with a gasket. A stuffing gland provides a tight joint at the shaft. Contact is made on the brass cylinder by two heavy fingers of standard nonstubbing design, mounted on asbestos lumber and zinc-plated. Contact tips are of heavy bar rolled copper. The case is sprayed with protecting paint.



Designs Recorder Contact Switch

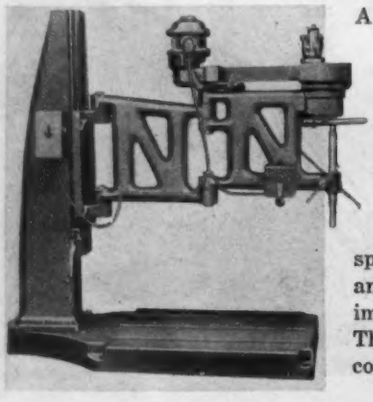
No. 17

Charles Engelhard, Inc., New York, has developed a mercury contact switch with electrical resistance of 0.003 to 0.004 ohms. It consists of a small glass tube containing mercury, oil and an inert gas. Platinum electrodes pass through the glass and are sealed. In the position as shown, the mercury makes contact with both electrodes; to break the circuit the tube is tilted, causing the mercury to flow away from the terminals. Its action is positive.

Machine Tightens Nuts With Speed

No. 15

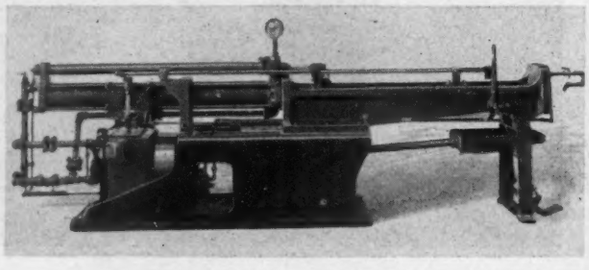
Hammond Mfg. Co., Cleveland, has brought out recently a radial stud driving and nut setting machine with swinging ball-bearing arms. In tightening, the nut is inserted in a special socket wrench in the spindle supported by the arm, spindle action being governed by a starting lever. When the nut is tight, the spindle automatically stops, the clutch disengaging. By reversing the motor, nuts or cap screws may be removed. Operated by a 1-horsepower induction motor at 1800 revolutions per minute, the spindle speed is 260 revolutions per minute, with a traverse of 8 inches. The minimum distance of the spindle from the column is 18 inches, the maximum 4 feet 4 inches. Gear reduction of about 2½:1 between the driving pulley and spindle gives power for handling studs or nuts to ⅝-inch diameter. A releasing clutch and reversing switch can be supplied. Of the three designs, pedestal and slotted base column type, and wall type, the former occupies a space 34 x 60 inches and weighs approximately 2100 pounds. The wall type weighs considerably less.



Broaching Machine Has Heavy Pull

No. 18

The Oilgear Co., Milwaukee, recently has brought out a new hydraulic broaching machine designed for a maximum pulling capacity of 25,700 pounds. Speed of both broaching and return strokes may be varied from 48 to 360 inches per minute independently. The machine has foot pedal control and is equipped with a safety device which prevents breaking broaches on either the cutting or the return stroke. Control is so arranged that the ram may be stopped or reversed by the operator at any point of its stroke. Power consumption is in direct proportion to the pull required on broaches and the efficiency is rated at 90 per cent. This machine may be driven from any constant speed power source, requiring no belts or gears. Cuts may be started without shock, the pull being steady without vibration. Speed does not vary regardless of resistance to the cutting tool. A direct reading pressure gage mounted above the machine gives the pull in pounds, indicating when a tool is dull and needs redressing.



as No. 19. The illustration, however, shows a roll head shaper made by the same company. It does work similar to the planer but has smaller capacity. The planer is designed to plane the wabble ends on all types of mill rolls and by necessity uses a push cut. The base is built in two units with long extended rails which form a guide backing for cradling the rolls. The base of the machine on which the column moves is trunnioned to the sub-base so that it can be swiveled at an angle to take care of roll ends which are tapered.

The main column of the planer moves horizontally along the bed and is provided with power feed and also power traverse. Full electrical drive is used. The roll is placed in a crade much the same as is shown in the case of the shaper. The machine will handle rolls up to a maximum of 56 inches with a maximum diameter of neck of 28 inches.

Grinds Large Mill Rolls

Norton Co. recently completed an unusually large roll grinding machine for installation at the Homestead works of Carnegie Steel Co. and this new unit is described as No. 2 in the accompanying digest. It is powered by four motors with a total rating of 70½ horsepower and has a capacity over the bed to swing rolls 54 inches in diameter and 21 feet long. The wheel carriage, which is the traversing member, is a self-contained unit driving the wheel and operating the pump. Featuring the design of this machine is the introduction of a reversing motor for the table drive.

The operator's position, as shown in the inset in the accompanying illustration, is on the table in a location where the contact of the wheel and work is visible. In front of the operator are handwheels for effecting the feed of the wheel and the hand traverse of the table used when locating the wheel at a shoulder. Controls for operating the automatic traverse of the carriage and the power movement of the wheel also are at hand, and on one side within reach is a panel on which the motor switches and controls are mounted. Starting and stopping on all four motors is by push button.

A 6-spindle drilling machine formerly manufactured by the National Acme Co. has been redesigned and now is built by the Kent Machine Co. The new unit is described as No. 5. It is a semiautomatic, horizontal machine with standard fixtures for drilling holes in bolts, pins and other circular or hexagonal pieces. The drilling table has 12 fixtures so located that six are in operation at one time while the other six are in a position for unloading and loading. After the drilling operation has been completed, the table automatically shifts.

For rapid driving of studs and setting of nuts uniformly to any desired degree of tightness, the Hammond Mfg. Co., has developed the radial machine described as No. 15. Such a unit is particularly useful in driving the numerous studs, nuts, cap screws, etc., found in automobile engine, chassis and similar asemblies. As is to be noted, the motor is mounted in a vertical position on the outer arm and is belted direct to the driving pulley. Ample power is provided for handling up to ⅝-inch diameter studs or nuts.

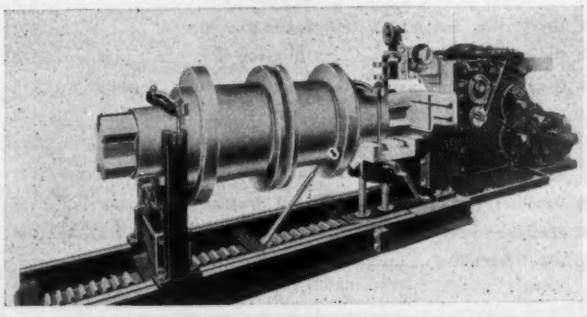
Redesigns Broaching Machines

A number of improvements have been made in the hydraulic broaching machine built by the Oilgear Co. and described as No. 18. The redesigned machine is considerably heavier, both in the base and trough, and the pump or power unit affords a greater capacity. A maximum pulling power of 25,700 pounds is available and the speed of the broaching stroke and the return stroke may be varied from 48 to 360 inches per minute independenly of each other.

Tool Planes Wabble Ends of Rolls

No. 19

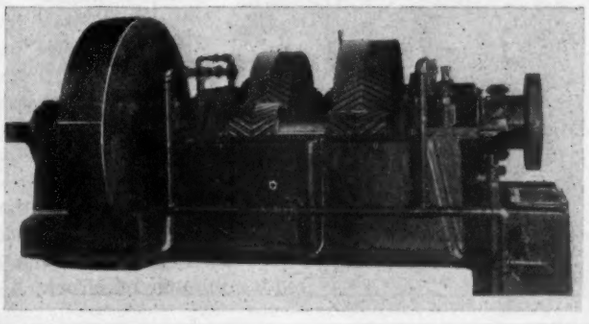
Morton Mfg. Co., Muskegon Heights, Mich., is marketing a new type traveling head planer for planing wabble ends of rolls. The new machine is similar to the roll shaper shown below but is larger and has a wider usefulness. The base is in two units with long extended rails forming a guide and backing for cradling the rolls. The base on which the column moves is trunnioned to the sub-base for swiveling at an angle to take care of tapered roll ends. The main column moves horizontally along the bed with power feed and traverse. Angular gibs take up natural wear. Feeding and operating mechanism is self-contained and automatically oiled. The ram is a square hollow-bored high carbon steel forging, its reciprocating motion being obtained by friction clutches and compound disks. By operating at the extremity of the return stroke, the friction feed prevents dragging the tool on the cut.



Develops Rolling Mill Gear Drive

No. 20

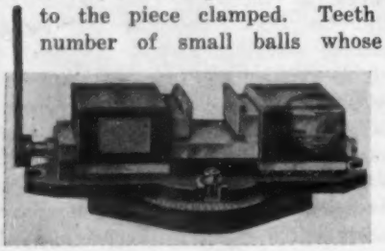
Farrel Foundry & Machine Co., Buffalo, has developed a 2-speed gear drive for rolling mills, designed to transmit 500 horsepower at 860 revolutions per minute motor speed to the mill and to give a speed range of 165 to 275 revolutions per minute. This drive permits the use of a standard motor at a relatively high speed. The drive is self-contained, the two pinions being integral with the flywheel shaft and each driving a wheel mounted on the shaft coupled to the mill. Each wheel is bushed and can rotate independently. A gear tooth clutch is placed between the wheels and is mounted on the low-speed shaft, engaging with teeth cut in the wheel hubs. The clutch slides on its shaft which it drives by splines cut integral, and is lever operated from outside the gear case. In changing speed only one wheel at a time can engage with the shaft, preventing both gears engaging at once.



Machine Vise Has Flexible Jaws

No. 21

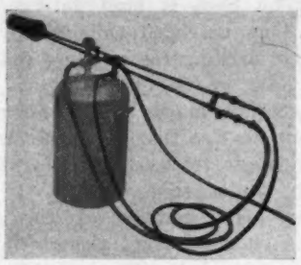
F. W. Jaeger, New York, sales agent for Ernst Krause & Co., Vienna, Austria, is marketing in the United States a new machine vise with flexible jaws. Face of each jaw is segmented so the teeth will conform to the piece clamped. Teeth are backed by a number of small balls whose movement allows for variation in teeth alignment. Distances of 4, 4¾ and 6 inches are possible in three sizes of vise.



New Oil Burner Preheats Castings

No. 24

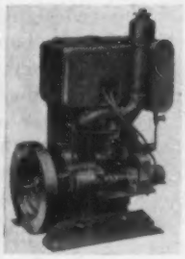
Alexander Milburn Co., Baltimore, Md., is marketing an atomizing type oil burner, designed primarily for preheating castings prior to welding. It utilizes crude, fuel or kerosene oils or distillate and compressed air under pressures varying from 50 to 100 pounds. Both air and oil flow through straight-line orifices. It is claimed that carbonization and oxidation are minimized.



Engine Drive Shaft Independent

No. 22

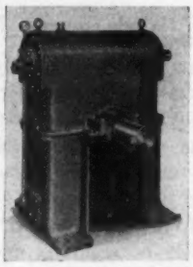
Novo Engine Co., Lansing, Mich., is marketing a new 2-cylinder 3 to 6 horsepower gasoline engine with independent drive shaft. This shaft can be furnished to rotate in either direction and at several different speeds, with governor, carburetor, manifold and magneto away from the shaft side in all cases. The engine is furnished to drive the shaft at 400, 600, 1200 or 1800 revolutions per minute. The crankshaft is of the opposed throw type, eliminating crankcase pressure.



Lubricates Gear Reducer by Pump

No. 25

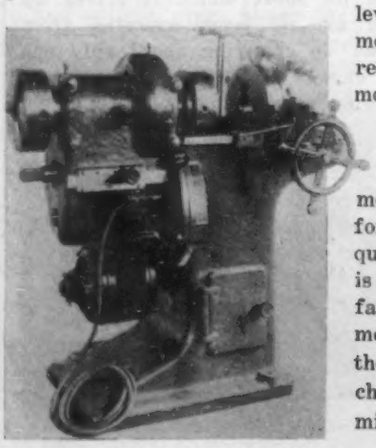
De Laval Steam Turbine Co., Trenton, N. J., is providing its high speed reduction gear transmissions with a forced feed system of lubrication. Strained oil is pumped through passages in the casing to spray nozzles on both sides of the worm. These passages are easily cleaned and the nozzles can be removed without disturbing piping. An automatic relief valve maintains constant oil pressure, irrespective of the speed of drive. It is claimed for the pump system of lubrication that it eliminates excessive heating.



Pipe Threader Has Portable Use

No. 23

Chicago Pipethread Machinery Co., Racine, Wis., has placed on the market a new ¼ to 2-inch power pipe threading machine for production and portable use. The machine can also thread bolts ½ to 1½ inches in diameter and, with a universal drive shaft, drive handstocks up to 12-inch pipe size. Three speeds are gained through sliding gears and lever control, with the clutch on the spindle. In the handle is a micrometer adjustment for selecting thread sizes. Machined sliding parts are gibbed to compensate for wear. The reaming tool, mounted on the cut-off block, is actuated without changing the die head location. A centrifugal oil pump operates at 1800 revolutions per minute and is located at the lowest reservoir level. The machine is motor driven with direct connected geared motor, protected from oil and chips. It is also designed to be mounted on wheels for portable use. A quick opening device is provided, and the faceplate is easily removed for cleaning the die head and changing dies with a minimum of effort.



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Bucyrus Co.	1/14
Chicago Pipethread Machinery Co.	1/14
Connor, W. B., Co.	1/14
Consolidated Machine Tool Corp.	1/14
Cutler-Hammer Mfg. Co.	1/14
De Laval Steam Turbine Co.	1/14
Engelhard, Charles, Inc.	1/14
Ernst Krause & Co.	1/14
Farrel Foundry & Machine Co.	1/14
Gallmeyer & Livingston Co.	1/14
General Electric Co.	1/14
Hammond Mfg. Co.	1/14
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Societies News

POWER executives and engineers from all over the country are expested to attend a Midwestern Engineering and Power exposition to be held at the American Exposition Palace, Furniture Mart building, Chicago, the week of Jan. 26. This conclave is being sponsored by six engineering societies, namely, American Institute of Electrical Engineers, American Society of Mechanical Engineers, American Institute of Mining Engineers, National Electrical Light association, Western Society of Engineers and National Safety council.

Exhibits of special interest to power plant executives and engineers will occupy the main floor of the Furniture Mart, over 175 companies having signified their intention of displaying their products. At the same time the various divisions of the above societies will participate in the Midwest Power conference, in the same building. Some of the more important papers listed are as follows:

Wednesday, Jan. 27

2:30 p. m.—"Present Practice in the Burning of Pulverized Fuel," by C. F. Hirshfeld, Detroit Edison Co., Detroit.

3:00 p. m.—"Byproduct Processing of Coal," by H. W. Brooks, Fuller Lehigh Co., Fullerton, Pa.

Thursday, Jan. 28

10:00 a. m.—"Layout and Equipment of Industrial Power Plants," by Paul L. Battey, Battey & Kipp, Chicago.

11:00 a. m.—"Safety and First Aid in Industrial Plants," by C. B. Scott, president, National Safety council.

11:20 a. m.—"Planning and Operating Industrial Hydraulic Plan for Best Economy," by L. F. Harza, Chicago.

Friday, Jan. 29

10:00 a. m.—"The Diesel Engine in the Industries," by Max Rotter, Busch-Sulzer Bros. Diesel Engine Co., St. Louis.

10:30 a. m.—"The Diesel Electric Locomotive, Its Present Status and Performance and Its Future Possibilities," by Allen H. Brewer, The Texas Co., New York.

11:30 a. m.—"Present Status of By-Product Gas Furnace Practice," by H. H. Clark, Peoples Gas, Light & Coke Co., Chicago.

* * *

Taylor Society to Meet

A meeting of the Taylor society will be held Feb. 5 at the Engineering Societies building, 29 West Thirty-ninth street, New York, on the subject of co-operation between unions and management in the railway field. Otto S. Beyer Jr., consulting engineer, will speak at that time on the technique of co-operation. Bert M. Jewell, president of the railway employes department of the American Federation of Labor, will discuss labor's appraisal of principles, methods and results, and Sir Henry Worth Thornton, chairman and president of the Canadian National Railways, will submit management's side of the problem.

Motor Division Sold

Wellman-Seaver-Morgan Co., Cleveland has effected an arrangement with the Sanderson Cyclone Drill Co., Orrville, O., under which the latter will take over the business of the motor division of the former, which has been carried on at Akron, O. Patterns, drawings, data and goodwill relating to marine and industrial types of gasoline motors are included in the transfer. Manufacture will be carried on at the plant of the Sanderson Cyclone Drill Co. at Orrville.

Employment in iron and steel plants in the Cleveland district increased 1.2 per cent during December, 1925; 4.5 per cent in automobile and automobile parts plants, and 1.5 per cent in nonferrous metal plants.

Steel Specialty Company Newly Organized

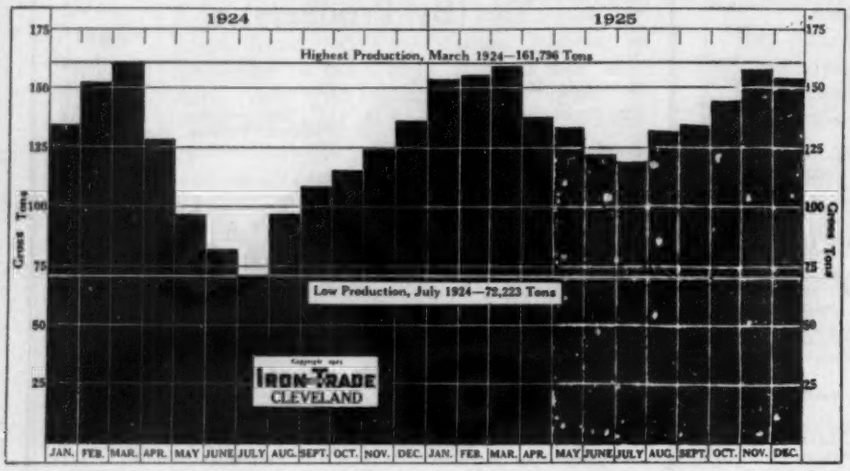
Pittsburgh, Jan. 13.—The Standard Steel Specialty Co., Beaver Falls, Pa., has been organized, with E. J. Wagner of Beaver Falls, formerly secretary and general manager of the Standard Gauge Steel Co., as president and treasurer. Alex Gilliland, president of the Duff Patents Co., Pittsburgh, and treasurer of the National Mortar & Supply Co., is vice president. The secretary and general sales manager is J. B. Jamison, formerly district sales manager at Pittsburgh for the Union Drawn Steel Co. On the board of directors are Alex Gilliland, W. B. Gilliland who is associated with the Duff Patents Co.; Dr. J. S. Louthan, director in the Farmers National bank and also of the Ingram-Richardson Mfg. Co., Beaver Falls, Pa; Theodore S. Smith, manager of Harris, Forbes & Co., Pittsburgh; W. S. Brown, president of W. S. Brown & Co., Pittsburgh, J. B. Jamison and E. J. Wagner.

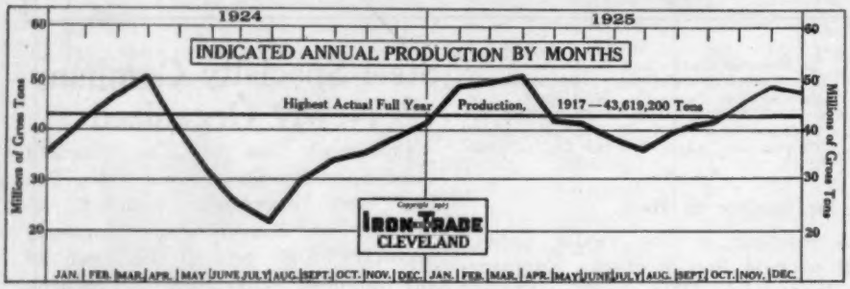
The company has taken over that portion of the business of the Union Drawn Steel Co., owners of the Standard Gauge Steel Co., devoted to the manufacture of machine and woodruff keys, machine racks, taper pins and other machined steel shapes. Plans are being made for the erection of a plant, in the early spring, probably in Beaver Falls.

S. A. Dinsmore, formerly Chicago sales manager for the Standard Gauge Steel Co., has become associated with the new company as western sales manager with office at 327 South La Salle street, Chicago.

Frederick S. Martyn has been appointed receiver of the Construction Iron Works, Inc., Brooklyn, N. Y.

Year's Ingot Total a Record


1924
1925
Highest Production, March 1924—161,796 Tons
Low Production, July 1924—72,223 Tons
Gross Tons
IRON TRADE
CLEVELAND
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.


1924
1925
INDICATED ANNUAL PRODUCTION BY MONTHS
Highest Actual Full Year Production, 1917—43,619,200 Tons
Millions of Gross Tons
IRON TRADE
CLEVELAND
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

ALTHOUGH the total production of steel ingots in December made a small gain, the rate of production was below that of November and the first recession after four months of steady improvement. Holiday interruptions doubtless minimize the significance of this. The total production for the year exceeded 44,000,000 tons for the first time in history and was about half a million tons better than in 1917, the previous high year. According to statistics compiled by the American Iron and Steel institute, from figures supplied by companies which in 1924 made 94.43 per cent of the country's total, production in December was 3,975,824 gross tons. This was an increase of 68,387 tons over the revised total of 3,907,437 tons in November. December had 26 working days as against 25 in the previous month.

On an average daily basis production in December was at the rate of 152,916 tons per day, which compared with the 156,297-ton rate of November, was a loss of 3381 tons, or 2.1 per cent. November had made a gain of 8.4 per cent over October. The December rate was 94.6 per cent of the country's peak output of 161,796 tons in March 1924.

With 311 as the number of working days in the year and the production of 152,916 tons per day in December, the indicated annual rate of production was 47,550,000 tons. The indicated annual rate of production in November was 48,600,000 tons. The country's highest actual production for a full year was in 1917 with 43,619,200 gross tons.

The full year production of 1925 aggregated 44,186,977 tons and was the highest on record, being 567,777 tons better than the 1917 total of 43,619,200 tons. As compared with the 36,811,157 tons made in 1924, the 1925 total was a gain of 7,375,820 tons, while against the 43,485,665 tons of 1923, the improvement was only 701,312 tons.

Steel Ingot Production, 1924-25

94.43 Per Cent of Industry Reporting

Gross Tons

1924	Open hearth	Bessemer	All other	Monthly production companies reporting	Calculated monthly production all companies	No. of working days	Approximate daily production all companies gross tons	Change in daily production per cent
Jan.	2,766,534	667,032	12,577	3,446,143	3,649,913	27	135,182	+18.0
Feb.	2,902,641	695,905	14,085	3,612,631	3,826,246	25	153,050	+13.2
Mar.	3,249,783	706,801	15,260	3,971,844	4,206,699	26	161,796	+ 5.7
Apr.	2,575,788	573,381	12,356	3,161,525	3,348,466	26	128,787	—20.4
May	2,060,896	425,099	6,648	2,492,643	2,640,034	27	97,779	—24.1
June	1,637,660	310,070	2,622	1,950,352	2,065,676	25	82,627	—15.5
July	1,525,912	241,880	5,162	1,772,954	1,877,789	26	72,223	—12.6
Aug.	2,042,820	361,781	5,764	2,410,365	2,552,891	26	98,188	+36.0
Sept.	2,252,976	409,922	6,864	2,669,762	2,827,625	25	108,755	+10.7
Oct.	2,505,403	438,468	7,058	2,950,929	3,125,418	27	115,756	+ 6.4
Nov.	2,479,147	459,349	8,403	2,946,899	3,121,149	25	124,846	+ 7.8
Dec.	2,811,771	546,506	11,707	3,369,984	3,569,251	26	137,279	+ 9.9
Total	28,811,331	5,836,194	108,506	34,756,031	36,811,157	312	117,984	
1925								
Jan.	3,262,748	689,996	11,960	3,964,704	4,198,564	27	155,502	+13.3
Feb.	2,931,964	602,042	13,014	3,547,020	3,756,243	24	156,510	+ 0.6
Mar.	3,336,169	614,860	13,633	3,964,662	4,198,520	26	161,482	+ 3.1
Apr.	2,857,802	515,715	14,182	3,387,699	3,587,524	26	137,982	—14.5
May	2,754,130	497,708	13,790	3,265,628	3,458,253	26	133,010	— 3.6
June	2,538,988	476,945	12,490	3,028,423	3,207,056	26	123,348	— 7.2
July	2,444,969	457,095	13,547	2,915,611	3,087,590	26	118,753	— 3.7
Aug.	2,696,667	523,734	12,914	3,233,315	3,424,034	26	131,694	+10.9
Sept.	2,737,251	547,121	13,977	3,298,349	3,492,904	26	134,342	+ 2.0
Oct.	3,075,995	584,567	15,624*	3,676,186*	3,893,028*	27	144,186*	+ 7.3
Nov.	3,091,361*	581,347	17,085	3,689,793*	3,907,437*	25	156,297*	+ 8.4
Dec.	3,169,224	569,304	15,843	3,754,371	3,975,824	26	152,916	— 2.1
Total	34,897,268	6,660,434	168,059	41,725,761	44,186,977	311	142,080	

*Revised

Confer on Billet Steel

Secretary of Commerce Hoover has issued the call for a conference at Washington, Jan. 26, of representatives of manufacturers, the consuming trades and technical organizations to determine if it is possible to adopt a uniform specification for new billet steel from which reinforcing bars are rolled. The annual revision conference on the 11 standard sizes of reinforcing bars will be held the same day at Washington. Standard sizes for spirals will be discussed.

Consider Uniform Costs

The second annual meeting of the Concrete Reinforcing Steel institute will be held at the Traymore hotel, Atlantic City, N. J., March 10-11. H. T. Bahr, Concrete Steel Co., is chairman of a committee which will consider at that time promulgating a uniform system for engineering, selling and cartage costs. Other members of the committee are H. F. Sanford, Kalman Steel Co., and Fred J. Paddon, Truscon Steel Co.

The Woonsocket Machine & Press Co., Woonsocket, R. I., voted to increase its capital stock from $1,200,000 to $1,500,000.

Current Statistics of Industry

Farm Implement Exports Best in Five Years

Washington, Jan. 12.—Purchases of American made agricultural implements during the 11 months of 1925, ended with November, are reported as the highest in five years by the agricultural implements division of the department of commerce, basing these figures on the valuations of the products shipped to foreign countries.

In the 11 months, the total valuation of the farming machinery exports totaled $70,460,761, about $12,000,000 greater than for the corresponding period in 1924. Argentina continued in the lead as the best customer. In other South American countries the demand was greater generally than in 1924. Sales to countries other than Cuba in the western hemisphere were satisfactory.

Russia has renewed its purchases of American implements on an important scale. The implements business in France has been good throughout most of the year, although American sales there decreased. Some of this decrease may be attributed to the implements furnished by Germany by way of reparations.

Otherwise few changes in the European markets were reported for November, although generally an increased demand has developed for American implements in western Europe and a somewhat decreased demand in the Baltic countries and in some of the eastern European countries.

More than one-third of the exports of implements during the 11 months of 1925 consisted of wheel tractors, of which 40,879 units, valued at $23,597,080, were exported. This is almost double the number and value of tractors exported in the similar period in 1924.

Engine Backlogs Gain

Washington, Jan. 12.—Unfilled orders for domestic shipment of railroad locomotives totaled 628 at the end of December, according to reports to the department of commerce. These orders aggregate the largest backlog since November 1923. Orders increased from 98 in November to 104 in December. The monthly average of shipments in 1925 was 94, compared with 122 in 1924 and 226 in 1923. Betterment in locomotive buying is seen in the steadily improving unfilled orders, December being the fourth consecutive monthly gain. Further comparisons of shipments and unfilled orders follow:

Year and month	—Shipment— Total	Domes.	Unfilled orders Total	Domes.
1920 monthly ave.	199	110	1,323	894
1921 monthly ave.	112	69	337	206
1922 monthly ave.	106	88	889	791
1923 monthly ave	226	249	1,592	1,511
1924 monthly ave	122	110	479	424
1925 monthly ave	94	68	438	361
Total, 1924	1,465	1,329	.....	.....
1925				
January	90	45	407	351
February	85	73	397	343
March	109	93	447	351
April	92	82	477	362
May	96	68	467	353
June	110	61	397	300
July	66	58	378	283
August	104	91	309	225
September	94	50	363	296
October	79	54	497	397
November	98	52	548	448
December	104	86	763	628
Total, 1925	1,127	813	.....	.....

Babbitt Sales Decrease

Washington, Jan. 12.—Consumption of babbitt metal in November dropped to 4,954,683 pounds from the total of 5,550,247 pounds in October, according to data just released by the department of commerce, based on reports from 27 manufacturers. Consumption by producers increased in November, the drop in the total being in sales by manufacturers. Following are further comparisons of consumption:

1925	Total apparent consumption	Sales by manufacturers	Consumption by producers
January	5,683,183	4,620,815	1,062,368
February	5,164,619	4,103,340	1,061,279
March	5,644,288	4,395,901	1,248,387
April	5,126,416	3,928,136	1,198,280
May	5,081,668	4,189,558	892,110
June	5,074,966	4,085,125	898,841
July	5,184,196	3,694,386	1,489,810
August	5,441,823	4,068,706	1,373,117
September	4,621,033	3,579,780	1,041,253
October	5,550,247	4,169,870	1,380,377
November	4,954,683	3,534,026	1,420,657
Total (11 mos.)	57,527,122	44,469,643	13,157,479

Temporary buildings constructed in Japan shortly after the earthquake in September 1923 may last 10 to 15 years, according to report to the department of commerce from A. B. Calder, acting commercial attache at Tokio. The buildings of temporary nature are better than those they replaced. The government program contemplates spending 100,000,000 yen, one yen equalling about 50 cents American money, for streets, sewers, steel bridges, canals, etc.

Malleable Castings Sales Drop in November

Washington, Jan. 12.—Production and shipments of malleable castings in November dropped from October, according to data reported by 142 companies to the department of commerce. November production totaled 61,845 tons, or 55.8 per cent of capacity which was 110,793 tons. Shipments totaled 55,719 tons, compared with 59,657 tons in October, while orders booked aggregated 55,627 tons, compared with 65,495 tons in October. Further comparisons of production and booking follow:

1924	Total tons produced	Per cent of capacity	Total tons booked	Monthly capacity
October	50,066*	43.8	54,589	114,264
November	47,987†	42.5	48,866	113,011
December	58,773‡	50.9	46,541	115,474
1925				
January	66,367‡	57.6	61,140	115,179
February	60,220†	53.0	49,673	113,530
March	61,245†	53.5	56,481	114,506
April	62,962*	55.1	58,001	114,195
May	61,003*	53.9	50,594	113,260
June	58,881*	51.5	47,303	114,284
July	57,229†	50.2	56,933	114,144
August	56,829*	49.6	48,691	114,455
September	58,573	51.3	49,832	114,217
October	68,234*	60.6	65,495	112,609
November	61,845*	55.8	55,627	110,793

†Includes 4 plants reported idle.
*Includes 5 plants reported idle.
‡Includes 6 plants reported idle.

Furniture Orders Drop

Washington, Jan. 12.—Orders for steel furniture in November were valued at $1,975,117 compared with $2,170,076 in October, it is reported by the department of commerce. Shipments in November were $1,885,505 compared with $2,130,498 in October. Unifilled orders increased to $1,496,242 from $1,406,117. Shelving orders and shipments dropped but unfilled orders increased. Further comparisons follow:

BUSINESS GROUP

1924	Orders received	Shipments	Unfilled orders
October	1,761,431	1,783,162	1,184,731
November	1,615,912	1,678,636	1,216,144
December	1,914,038	1,872,677	1,220,232
1925			
January	2,206,952	1,972,137	1,455,890
February	1,986,151	1,939,097	1,501,460
March	2,012,322	2,027,863	1,482,859
April	1,964,959	2,009,199	1,466,428
May	1,855,552	1,918,869	1,383,424
June	1,792,656	1,805,599	1,390,540
July	1,823,435	1,810,754	1,445,897
August	1,664,649	1,688,965	1,358,386
September	1,969,769	1,816,484	1,535,231
October	2,170,076	2,130,498	1,406,117
November	686,814	574,905	739,831

SHELVING

1925			
March	$ 606,754	$ 539,972	$ 515,434
April	566,834	650,769	436,048
May	523,426	549,272	372,296
June	501,182	514,117	360,089
July	510,815	482,187	398,973
August	516,694	452,716	447,255
September	624,676	542,173	511,689
October	730,911	622,471	626,933
November	1,975,117	1,885,505	1,496,242

Industrial Men in the Day's News

Eugene J. Buffington, for 27 Years Head of the Illinois Steel Co.

EXTENSIVE advancement of the steel industry has come within his leadership of one of the largest producing units of the country.

HIS INTEREST in younger men is evidenced by his trusteeship of Vanderbilt university and his activities in the Y. M. C. A.

MANY and varied are his industrial interests, including banking, fuel, cement and public utilities. His directorships are numerous.

NEW YEAR'S day launched Eugene J. Buffington, president of the Illinois Steel Co., Chicago, upon his twenty-seventh year as the active head of this company which in 1901 became a constituent unit of the United States Steel Corp. To few men has been given the opportunity to be associated with the construction of as much pig iron and finished steel capacity as Mr. Buffington.

In Mr. Buffington's administration as president the works at Gary, comprising 12 blast furnace stacks, 45 open-hearth furnaces, a 750,000-ton rail mill and adequate finishing capacity, has been constructed. Two stacks each have been built at the South Chicago and Joliet works. The tonnage capacity at Joliet has been doubled and that at South Chicago increased one third.

Meanwhile, Mr. Buffington has not neglected the executive side of his post. He has been president of the Indiana Steel Co., which nominally owns the Gary works, and the Gary Land Co. and been chairman of the board of the Gary Heat, Light & Water Co.

His directorships include the above companies, the Steel corporation, H. C. Frick Coke Co., United States Coal & Coke Co., United States Fuel Co. and Universal Portland Cement Co.

He also sits on the boards of the Continental & Commercial National Bank, Chicago, two smaller banks in South Chicago and Gary, and the Steel corporation and Carnegie pension fund.

Mr. Buffington, who was born at Guyandotte, W. Va., March 14, 1863, received his early education in the public schools of Covington, Ky., and later attended Chickering institute at Cincinnati and Vanderbilt university at Nashville, Tenn. In 1884 he entered the iron and steel industry at Covington as a manufacturer of wire nails. Five years later he built the wire, rod and nail mills at Anderson, Ind., which have since become part of the American Steel & Wire Co.

In 1898 Mr. Buffington moved to Chicago to become an executive and director of the American Steel & Wire Co. On Jan. 1, 1899, he succeeded John W. Gates as president of the Illinois company.

In the war period Mr. Buffington served on the capital issues committee of the Chicago federal reserve bank. His activities outside the industry include trusteeships of the Community Trust of Chicago, Chicago Sunday Evening club, Y. M. C. A. and Vanderbilt university. He is vice president of the Chicago Post Army Ordnance association.

Like most Steel corporation executives, Mr. Buffington has a namesake in a Great Lakes iron ore carrier. His name also has been given to the town of Buffington, Ind.. the home of the Universal Portland Cement Co.

He is a member of the Commercial, Chicago, Mid-Day, Glenview, Old Elm and University clubs of Chicago, and the University club of Evanston, Ill., the American Iron and Steel institute and other industrial associations.

Men of Industry

Personal News of a Business Character Pertaining to the Iron and Steel and Related Fields of Enterprise

WALTER B. HIGGINS has been elected a director and vice president in charge of sales of the Wheeling Steel Corp., Wheeling, W. Va., to succeed Andrew Glass, who died Nov. 21. Mr. Higgins has been connected with the Wheeling Steel Corp. and LaBelle Iron Works, which became part of the Wheeling company, for 25 years. He has for many years held the position of general manager of sales.

George W. Moore has been made vice president in charge of operations of the Wheeling corporation. He has been with the company for 15 years, being with the Whitaker-Glessner Co. Mr. Moore was general manager of the works at Portsmouth, O., of that company at the time of its merger with the LaBelle Iron Works and the Wheeling Steel & Iron Co. to form the Wheeling Steel Corp. In recent months Mr. Moore has been assistant general manager with headquarters at Wheeling.

* * *

Lawrence F. Sherman has resigned as executive secretary of the League for Industrial Rights, New York. His resignation became effective Dec. 31.

* * *

D. E. Aiken, formerly purchasing agent of the Emsco Tool Co., Los Angeles, now is with the Western Drop Forge Co., that city.

* * *

J. E. Kelley, general sales manager of the Simonds Saw & Knife Co., Fitchburg, Mass., will spend some time with the Los Angeles office of that organization.

* * *

T. M. Girsler, general manager of the Jones & Laughlin Steel Corp., Pittsburgh, has been elected a director and vice president in charge of operations of that company.

* * *

Henry Sears Hoyt, Chicago branch manager and James King Hoyt, Jr., sales manager in New York, have been admitted as partners in A. Milne & Co., New York, iron and steel jobber, effective Jan. 2.

* * *

W. O. Whitney has been appointed sales manager of the Maxim Silencer Co., Hartford, Conn., manufacturer of silencers for industrial machinery. He formerly was with the Brunswick-Kroeschell Co., New Brunswick, N. J., manufacturer of refrigerating machinery. Mr. Whitney was sales manager of the marine department of the Brunswick company for ten years.

* * *

Carmi A. Thompson, attorney and head of Tod-Stambaugh Co., Cleveland, iron ore interests, has been elected president of the Becker Steamship

CARMI A. THOMPSON

Co., that city, to succeed William D. Becker. Mr. Becker has resigned as president but will continue as a director. The Becker company operates six ore boats.

* * *

R. E. English, for 21 years purchasing agent of the Bessemer Gas Engine Co., Grove City, Pa., retired recently.

G. W. Brown, for ten years in the purchasing department succeeds Mr. English.

* * *

J. B. Marks, assistant to the president of the Colorado Fuel & Iron Co., Denver, has been elected vice president in charge of sales, traffic and purchases, effective Dec. 30. He continues as assistant to the president.

* * *

Stephen McGovern, for ten years in the St. Louis office of the Matthew Addy Co., and later resident manager of the Domhoff & Joyce Co. at St. Louis, has joined the sales organization of the Sterling Steel Co., East St. Louis, Ill.

* * *

Robert H. Dibble has been appointed metallurgical engineer of the American Sheet & Tin Plate Co., Pittsburgh, effective Jan. 1. William C. Tamplin has been appointed assistant to the vice president of the American company, effective Jan. 1.

* * *

J. A. McEwen has been appointed chief engineer of the Pittsburgh Bridge & Iron Works, Pittsburgh, fabricator and erector of structural and other steel and H. A. Wilson has been placed in charge of sales of that company.

* * *

Owen D. Young, chairman of the board of the General Electric Co., Schenectady, N. Y., has been elected a member of the board of the Federal Reserve bank of New York, to serve a three year term. His directorship started Jan. 1.

* * *

Clyde H. Perkins has been made head of the ball plant engineering department of the New Departure Mfg. Co., Bristol, Conn., to succeed Gerald H. Budge who was advanced to assistant superintendent of the plant. Mr. Perkins joined the company 11 years ago.

* * *

J. D. Berg, vice president of the Dravo-Doyle Co., Pittsburgh, merchant engineers, recently was elected president of the company to succeed Thomas E. Doyle, retired. Mr. Doyle will remain with the company as special agent. Vice presidents chosen were H. B. Mann, assistant sales manager of the Pittsburgh office, S. P. Felix, manager of the Philadelphia office, and W. K. Fitch, manager of the Cleveland office.

* * *

Arthur H. Dufort was placed in charge of the St. Louis district sales office of the Wheeling Steel Corp., Wheeling, W. Va., effective Jan. 1. He succeeds M. F. McClaren, resigned. Mr. Dufort has been with the company since the consolidation of the La Belle Iron Works, Wheeling Steel & Iron Co. and Whitaker-Glessner Co. Prior to that he spent eight years with the Wheeling Steel & Iron Co.

For the past five or six years he was with L. J. Lowe, manager of the Philadelphia office of the Wheeling Steel Corp.

* * *

Earl Constantine, secretary to the president of the National Manufacturers association, has resigned.

* * *

D. L. Bollinger has been made president of the Mount Morris Valve Corp., Mt. Morris, N. Y.

* * *

L. C. Deckard has joined the Laughlin-Barney Machinery Co., Pittsburgh, having resigned recently from the Motch & Merryweather Machinery Co., Cleveland.

* * *

C. E. Hopping, Hopping Bros. Foundry, Pasadena, Calif., has been in charge of the Alhambra Foundry Co., Alhambra, Calif., since the latter plant took over the Southern California Foundry Co., Alhambra.

* * *

C. Louis Meyer, president of the Concrete Engineering Co., Omaha, Neb., will represent the Concrete Reinforcing Steel institute at the meeting of Pacific coast steel interests at Del Monte, Calif., Jan. 21-23.

* * *

Arthur G. Henry, formerly metallurgist of the Perfection Tool Hardening Co. has joined the Danly Machine Specialties, Inc. He has been appointed chief metallurgist at the Chicago plant.

* * *

A. L. Pearce, newly elected treasurer of the Peerless Motor Car Co., Cleveland, formerly was assistant treasurer. He previously was with Cadillac Motor Car Co., Detroit Steel Products Co., and United States Radiator Corp., Detroit.

* * *

Alfred Bourgeois has joined the organization of the Triumph Electric Co., Cincinnati, effective Dec. 15. He formerly was assistant to the vice president of the Sprague Electric Co., and then served successively as sales manager, secretary and president of the Eck Dynamo & Motor Co.

* * *

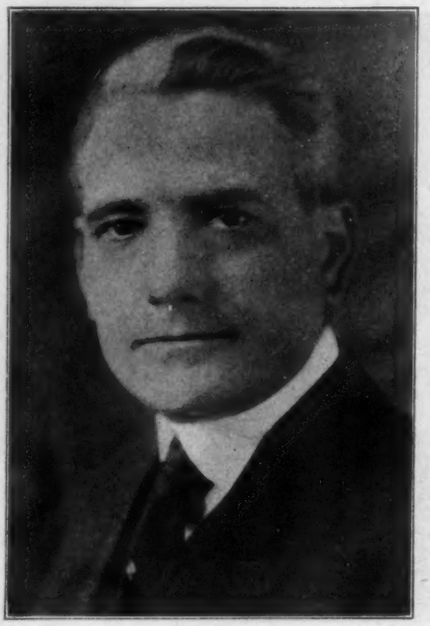
Elmer W. Shepard has been made treasurer of the Graybar Electric Co., recently formed to succeed the supply department of the Western Electric Co. For several years he had been credit manager of the Western Electric Co. at Cleveland. He was born in Winona, Minn., and employed first with the Western company at Chicago in 1906. In 1908 he was made cashier and credit man at the Indianapolis office and then came to Cleveland.

* * *

Nils Anderson, president of the Debevoise-Anderson Co., Inc., New York, just returned from Europe, has been appointed agent for the sale of iron ore in this country by Sota & Aznar, of Bilbao, Spain. He succeeds Victor de Ysasi who for 20 years has represented Sota & Aznar in the United States. Mr. de Ysasi, on account of ill health in his family, has moved to Malaga, in southern Spain.

* * *

Howard Wood, Jr., has retired as president of the Alan Wood Iron & Steel Co., Philadelphia. He has been



W. W. SAYERS
New Chief Engineer of the Link-Belt Co., Chicago, a Position Just Created, as Announced in Iron Trade Review, Dec. 31

in ill health for the past year. Ledyard Heckscher, formerly vice president, has been elected president. Mr. Heckscher has been connected with the organization since its consolidation with Richard Heckscher & Sons Co., in 1911.

* * *

George H. Charls, just elected president of the United Alloy Steel Corp., Canton, O., to fill the office vacated nominally four years ago by Edward A. Langenbach, chairman of the board, formerly was vice president and general manager. Mr. Charls has just completed 25 years in the iron and steel industry, 17 of which he spent with the American Rolling Mill Co., Middletown, O. For four years he was vice president and general manager of the Stark Rolling Mill Co. and the Berger Mfg. Co.

L. G. Pritz, who has been in full charge of operations of the United Alloy company, has been elected vice president and general manager to succeed Mr. Charls. Mr. Pritz had been with the Illinois Steel Co., and then with the Timken Roller Bearing Co., Canton, O., before joining the United Alloy organization.

Edward A. Langenbach continues chairman of the board.

* * *

E. D. Giberson, president of E. D. Giberson & Co., Inc., of New York and Havana, Cuba, will leave for an extended European trip, Jan. 16. He will spend considerable time in France, England and Germany with the various steel interests with whom he has been associated. In addition to sales of American made iron and steel products, E. D. Giberson & Co. Inc., represent the Thyssen steel works of Germany and in Cuba they also represent the German tube syndicate. Mr. Giberson is not expected to return until April.

* * *

Leonard C. Crewe, general manager of the Robesonia Iron Co., Philadelphia, has been appointed vice president in charge of operations and a director of the company. Before joining the Robesonia company, Mr. Crewe was president of the LaFollette Coal & Iron Co., LaFollette, Tenn. Previously he was with the Maryland Steel Co., Dominion Iron & Steel Co. and the Illinois Steel Co. Mr. Crewe will have charge of operations of the Robesonia company, and will handle the purchase of supplies and raw materials. His office will continue at Robesonia, Berks county, Pa.

* * *

Cummings C. Chesney, manager and chief engineer, General Electric Co., at its Pittsfield, Mass., plant, has been nominated for president of the American Institute of Electrical Engineers. Mr. Chesney was born in Sellingsgrove, Pa., Oct. 28, 1863 and was graduated from Pennsylvania State college in 1885. After teaching for three years, he became connected with the laboratory at Great Barrington, Mass., of William Stanley. He was one of the original incorporators of the Stanley Electric Mfg. Co., Pittsfield, Mass. Mr. Chesney was vice president and chief engineer from 1904-6, in the latter year becoming chief engineer and manager of the Pittsfield works of the General Electric Co. which had acquired the Stanley company. He has served as manager and vice president of the American Institute of Electrical Engineers and on various of its committees. The Edison medal was awarded Mr. Chesney in 1921 "for early developments in alternating current transmission."

Warehouse Buying Recovers Quickly

Good Buying Indicates Heavy Spring Sales —Prices Steady

INVENTORY lull in the iron and steel warehouse trade was short-lived this year. Steady pressure of manufacturers for speedy deliveries of small tonnages continue to pile up good sales on jobbers' books. Prices are firm and unchanged.

Jobbers in the New York metropolitan district still are feeling the effects of inventory season, although the depression has not been as great as expected. Severe winter weather is slowing demand for structural and reinforcing bars. Prices are firm throughout the list.

Philadelphia jobbers have adopted quantity differentials on cold rolled steel bars, effective Jan. 4, charging one cent extra for less than 100 pounds, three-fourths of a cent for 100 to 299 pounds, one half cent for 300 to 499 pounds. Competition is keener than usual in Philadelphia, especially on out-of-town business.

Buffalo iron and steel warehouses report an earlier recovery than usual from the holiday slump in business. Prices are steady and some readjustments are being considered which will be upward, if adopted.

Warehouse business at Cincinnati is holding up fairly well despite the inventory period. Bars and sheets are in good demand. Inquiries before the trade indicate better buying in all lines before the end of this month.

With the passing of the inventory period specifications on purchases at St. Louis warehouses have increased. General manufacturing trade is featuring demand. Another satisfactory development is further improvement in the demand from oil fields, particularly Arkansas and Northern Louisiana. Leading warehousemen consider prospects for the first half of 1926 the most hopeful in a decade.

January buying from Cleveland warehouses is ahead of that of December for the same period, according to leading jobbers. Sheet prices have been advanced $2 to $3 a ton, the only alteration in quotations during the past week. The increase was effective Jan. 11.

Wis-well Improved Railroad Crossing Co., Chicago, has increased capital from $25 000 to $100,000 and directors from three to seven. Its office has been removed to room 1351 Otis building, 10 South La Salle street.

Quotations at Cents Per Pound at Leading Market Centers

STEEL BARS

Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Cleveland	3.10c
Detroit	3.15c
Los Angeles	3.05c
New York	3.24c
Philadelphia	3.00c to 3.20c
Pittsburgh	2.90c
Portland	2.85c
San Francisco	3.30c
Seattle	3.25c
St. Louis	3.15c
St. Paul	3.25c

IRON BARS

Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Detroit	3.15c
New York	3.24c
Philadelphia	3.00c to 3.20c
St. Louis	3.25c

REINFORCING BARS

Boston	3.265c to 3.50c
Buffalo	3.30c
Chicago, billet	2.60c
Chicago, rail steel	2.00c to 2.10c
Cincinnati	3.30c
Cleveland	2.85c to 3.10c
Detroit	3.15c
Los Angeles, C. L.	3.05c
Los Angeles, L. C. L.	3.30c
New York	2.95c to 3.15c
Philadelphia	3.00c to 3.25c
Pittsburgh	2.50c to 2.60c
San Francisco, C. L.	3.35c
San Francisco, L. C. L.	3.80c
Seattle	3.50c
Youngstown	2.50c

STANDARD STRUCTURAL SHAPES

Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland	3.20c
Detroit	3.25c
Los Angeles	3.05c
New York	3.34c
Philadelphia	2.65c to 3.20c
Pittsburgh	3.00c
Portland	2.85c
San Francisco	3.30c
Seattle	3.35c
St. Louis	3.25c
St. Paul	3.35c

PLATES

Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland, ¼-inch and thicker	3.20c
Cleveland, 3/16-inch	3.425c
Detroit	3.25c
Detroit, 3/16-inch	3.45c
Los Angeles	3.15c
New York	3.34c
Philadelphia	2.70c to 3.20c
Philadelphia, 3/16-inch	2.90c to 3.40c
Pittsburgh	3.00c
Portland	3.25c
San Francisco	3.30c
Seattle	3.25c
St. Louis	3.25c
St. Paul	3.35c

NO. 10 BLUE ANNEALED SHEETS

Boston, 3/16-inch	3.915c
Buffalo	3.90c
Chicago	3.50c
Cincinnati	3.60c
Cleveland	3.25c
Detroit	3.65c
Los Angeles	3.70c
New York	3.89c
Portland	4.25c
Philadelphia	3.20c to 3.50c
San Francisco	3.75c
Seattle	4.50c
St. Louis	3.65c
St. Paul	3.75c

NO. 28 BLACK SHEETS

Boston	5.25c
Buffalo	4.60c
Chicago	4.10c
Cincinnati	4.55c
Cleveland	4.10c
Detroit	4.25c
Los Angeles	4.75c
New York	4.35c
Philadelphia	4.60c to 4.65c
Portland	5.50c
San Francisco	4.75c
Seattle	5.50c
St. Louis	4.60c
St. Paul	4.35c

NO. 28 GALVANIZED SHEETS

Boston	6.25c
Buffalo	5.90c
Chicago	5.25c
Cincinnati	5.65c
Cleveland	5.25c
Detroit	5.50c
Los Angeles (corr. 28 ga.)	6.00c
New York	5.50c
Philadelphia	5.80c to 5.85c
Portland	6.25c
San Francisco	6.00c
Seattle	6.50c
St. Louis	5.70c
St. Paul	5.50c

BANDS

Boston	4.015c
Buffalo	4.05c
Chicago	3.85c
Cincinnati	3.95c
Cleveland	3.85c
Detroit	3.80c
Los Angeles	3.90c
New York	3.99c
Philadelphia	3.75c to 3.90c
Pittsburgh	3.60c
Portland	4.25c
San Francisco	4.15c
Seattle	4.25c
St. Paul	3.90c

HOOPS

Boston	5.50c
Buffalo	4.05c
Chicago	4.15c
Cleveland	3.85c
Detroit	4.30c
New York	4.49c
Philadelphia	4.10c to 4.25c
Pittsburgh	3.60c
Seattle	5.00c
St. Paul	4.40c

COLD FINISHED STEEL

	Rounds and hexagons	Flats and squares
Boston	4.05c	4.55c
Buffalo	3.95c	4.45c
Chicago	3.60c	4.10c
Cincinnati	3.85c	4.35c
Cleveland	3.90c	4.40c
Detroit	3.85c	4.25c
Los Angeles	5.25c*	.....
New York	4.00c	4.50c
Philadelphia	4.00c	4.50c
Pittsburgh	3.60c	4.10c
Portland	5.00c*	.....
San Francisco	3.75c*	.....
Seattle	5.00c*	.....
St. Paul	3.85c	.....

*Rounds only.

COLD ROLLED STRIP

Boston, .100 inch, 500 lb. lots	6.30c
Buffalo	6.35c
Chicago	6.25c
Cincinnati	7.15c
Cleveland, over 500 pound lots	5.95c
Detroit	6.20c
New York	6.25c
Philadelphia	6.25c
Pittsburgh	6.30c

FOREIGN IRON AND STEEL

New York, duty paid

Swedish hollow drill steel	15.00c
Swedish iron bars round	6.75c
Flats and squares	7.00c

WELDED PIPE

Discounts from warehouse. New York City

Standard Steel Pipe

WROUGHT STEEL PIPE

	Black	Galvanized
⅛-inch butt	—23	+21
¼ to ⅜-inch butt	—36	— 8
½-inch butt	—46	—29
¾-inch butt	—51	—37
1 to 3-inch butt	—53	—39
2-inch lap	—40	—23
2½ to 6 inch lap	—48	—35
7 and 8-inch lap	—44	—17
9 and 10-inch lap	—38	—14
11 and 12-inch lap	—37	—13

WROUGHT IRON PIPE

	Black	Galvanized
⅛ to ⅜-inch butt	+44%	+78%
½-inch butt	— 4	+19
¾-inch butt	—11	+ 9
1 to 1½-inch butt	—14	+ 6
2-inch lap	— 5	+14
2½-inch lap	— 9	+ 9
3 to 6-inch lap	— 3	+ 6
7 to 12-inch lap	— 3	+16

British Steel Demand Better; Prices Lag

(Concluded from Page 169)

produce about 100,000 tons per month. The course of Continental prices may be affected by any improvement in the French currency and little change for the better is required to make British steel strongly competitive. English bars have shown a little more firmness lately, and billets continue at £6 2s 6d ($29.70). Isolated efforts to obtain higher prices for plates and sections have already failed, one firm which quoted £8 ($38.80) for its plates last week delivered into this district now quoting £7 17s 6d ($38.20) although this represents a rise of 2s 6d ($0.60) on prices taken a short time ago.

The galvanized sheet trade is closing the year quietly in the matter of new business but order books are sufficiently furnished to insure continued activity for eight to ten weeks. Scotch makers of thin sheets have several months work in hand but are becoming short of orders for thicker gages. The price remains at £16 12s 6d ($80.62) as the basis with occasional bookings above and below this figure. Inquiries indicate renewed buying early in the new year. Trade in black sheets and the special tinned varieties made in Staffordshire continues active, several trades, including the motor and cycle industries, still taking good quantities. The official returns for November show that 125 sheet mills were at work, an increase of two on the month, but a reduction of one on the year.

In tin plate there is just sufficient business to maintain the minimum of 19s 9d ($4.79) per box, with occasional bookings at 3d ($0.06) over or below these figures. The export market is decidedly dull, the only development being a few inquiries from the Continent. Terne plates are also experiencing a quiet period. Local tinplate bars remain at £6 5s ($30.31) with foreign steel available at about £1 ($4.85) below this price.

British Export Prices on Higher Level

London, Jan. 4.—(*European Staff Service*) — The Board of Trade returns for November, 1925, give the average British export prices per gross ton for certain iron and steel products. These prices are compiled from actual contracts made several months ago and this accounts for the difference between the present quotations and the base prices regularly quoted by IRON TRADE REVIEW.

The following table shows the price of each of the seven principal commodities exported from Great Britain. Compared with those prevailing in the corresponding period of last year, prices have increased, with the exception of that of ferromanganese and plates; they are also higher generally than they were for October, 1925.

The price of pig iron was 18s 9d ($4.50) more than in October, 1925, and 25s 7d ($6.20) higher than in November, 1924; ferromanganese was £5 13s 7d ($27.50) less than in the preceding month and £3 18s 9d ($19.10) less than in November last year. Carbon billets were 10s ($2.42) less than in October this year and 13s ($3.55) less than in November, 1924; beams were £2 15s 10d ($13.60) higher than in the preceding month and £2 19s ($14.35) higher than in November, 1924. Galvanized sheets were £2 2s ($10.20) higher than in October, 1925, and £2 5s 7d ($11.10) higher than in November last year; tinplates were £3 15s ($18.20) higher than in the preceding month and £3 12s ($17.50) higher than in November, 1924. Plates were 1s 5d (36c.) more than in October, 1924, but 10s ($2.42) less than in November, 1924.

	£	s	d	$
Foundry pig iron	4	17	9	23.75
Ferromanganese	12	12	0	61.00
Carbon billets	13	3	0	63.85
Beams	12	0	7	58.10
Galvanized sheets	20	16	0	97.50
Tinplate	24	13	0	117.00
Plates	10	16	7	52.30

Cheap French Franc Hurts Belgium

BRUSSELS, Jan. 2.—(*European Staff Service*)—Belgian iron steel makers find it difficult to meet French competition on export business. This is due to the recent reversal of exchange rates between these countries. For the first time in many months the Belgian franc commands a premium over the French franc. Until French prices advance sufficiently to offset the recent decline in French exchange the latter will continue to enjoy a brisk export business. Belgian manufacturers refuse to make the concessions necessary to meet this competition as they feel that this situation cannot last for more than a few weeks. In the meantime, English merchant houses buying for the Far East are deferring placing bar tonnage as Belgian mills are declining to take on the business on the basis of £5 ($24.30) f.o.b. Antwerp which is being offered. Some makers have quoted as low as £5 5s ($25.50), but this appears to be the extreme limit. One specification covering rounds and squares from ½-inch to 1¾ inches was booked at the flat all-round price of £5 8s ($26.25) per metric ton, f.o.b. Antwerp. Basic bessemer blooms are offered at £3 9s ($19.20), billets at £4 5s 6d ($20.80) and sheet bars at £4 10s ($21.85). Small shapes are sold on practically the same basis as bars, as are also plates 5 millimeters thick. Plate mills have tried to advance prices but to no avail. Export orders for 5-millimeter plates have been taken recently as low as £5 8s ($26.25).

Pipe mills are busy, but prices are

Franc—$0.0425

less firm. Export inquiries bring out quotations of four to five per cent discount off the British list.

Few orders of importance have been placed during the past fortnight. It is of interest to note, however, that Cockerill has taken a contract for two 10,000-horsepower gas engines, amounting to £72,000 ($350,000).

Steel Duty Opposed by British Mills

London, Jan. 4.—(*European Staff Service*) — Recently a committee was appointed by the British government to investigate the position of the iron and steel industry, to ascertain whether a safeguarding duty should be applied in favor of the steelmakers. It is understood the committee has decided such a duty cannot be recommended. The idea of a subsidy has also been ruled out. This result was generally expected, especially in view of the antagonism of rerollers and even of some pig iron and steelmakers.

In a manifesto from a number of representative British steel rerollers it is stated the duty would cause increase of steel prices to the home consumer. It is pointed out that the demand for protection seems to come in fairly regular cycles, and the idea that a number of efficient British steelworks may have to close down is ridiculed. It is further stated that a duty would lead to a reduction of exports and increase unemployment in finishing mills. At present the galvanized sheet section alone exports 85 per cent of its output at the rate of 700,000 tons per annum, valued at over £11,000,000 ($53,350,000), whereas the home consumption is only about 110,000 tons, worth less than £2,000,000 ($9,700,000). The rerollers point out that few British steelmakers have laid themselves out especially for the production of semifinished products, and many of them are ill-equipped for the purpose, while there are some classes which can be obtained only on the Continent.

Notwithstanding the general world steel trade depression, it is said, the British output in 1924 was greater than in 1913, which was a boom year. This is due to the erection of new plant during the war.. The importation of semifinished steel on a large scale has been going on for nearly 30 years and the increased plant calls for increased consumption of its raw material.

There naturally are arguments on the other side, the principal one being that semifinished steel can be produced in Great Britain and that the production of this commodity would give employment at the rate of 40,000 men for 1,000,000 tons of steel. However, the question of price remains and the position of the rerollers is strong, so that in all probability the application for a duty from the part of the steelmakers will be turned down. Furthermore, the scheme of using the return obtained from a duty for bounties to rerollers is complex.

Obituaries

RICHARD E. BEBB, chairman of the Central Steel Co., Massillon, O., and prominent in the alloy steel industry, died Jan. 5 at Philadelphia, at the age of 55. Mr. Bebb was chairman of the Canton Stamping & Enameling Co., Canton, O., president of the Enterprise Aluminum Co., Massillon and a director of many organizations, including, Merchants National bank, vice president; Holmes Automobile Co., Canton, City National bank, Canton, Midland bank, Cleveland; and vice president of the Kite Boiler & Tank Co., Canton. After 15 years as president and general manager of the Canton Stamping company, Mr. Bebb resigned active direction of the company in 1923 to become chairman of the board.

Mr. Bebb was born in Chillicothe, O., June 24, 1870. Following education in the public schools and a business college at Columbus, O., he entered the employ of his father who was a general contractor. Shortly afterward he joined the Columbus Bolt Works, and in 1899, in association with other interests, formed the Columbus Vehicle Co., Mr. Bebb becoming president and general manager. After five years he resigned and became sales agent for the Braeburn Steel Co. at Chicago. In 1906 he became general manager of the Canton Stamping & Enameling Co. In 1913 he was involved in the purchase of the controlling interest in the Massillon Rolling Mills Co., and upon its reorganization, he became president and general manager. The same interests in 1914 organized the Central Steel Co., for the manufacture of alloy steels of which Mr. Bebb became president and general manager. He was a member of many social and business clubs.

* * *

Phillip G. Randall, head of the Randall Mfg. Co., Boston, for many years manufacturer of dies, died recently at his home in Malden, Mass.

* * *

George J. Hoesch, in charge of sales in the district around Columbus, O., for the John A. Roebling Sons Co. Trenton, N. J., manufacturer of wire rope and cable, died at his home in Columbus recently at the age of 36.

* * *

Charles L. Bailey, Canadian general manager of William Jessop & Sons, Ltd.. Sheffield, England, and Toronto, died Dec. 28 at the latter city aged 64. He formerly had been with Henry Disston & Sons, Philadelphia.

* * *

Charles E. McFarlan, 76 years old, president of the William Powell Co., Cincinnati, brass founder, died Jan. 1. there. Mr. McFarlan had been connected with the Powell company for more than 30 years. He was born in Cincinnati and had been prominent in

RICHARD E. BEBB

church and social activities. He was at one time secretary of the Crane & Breed Mfg. Co.

* * *

John T. Ling, 44, Wilmette, Ill., sales manager of the Chicago Flexible Shaft Co., Chicago, succumbed to an attack of acute indigestion while driving his automobile in Evanston, Ill., Jan. 2.

* * *

Charles F. Long, first vice president, Dover Stamping & Mfg. Co., Cambridge, Mass., and formerly conducting his own stamping business in Mason City, Iowa, died recently at his home in Cambridge.

* * *

James L. Geddes, 69, former president of the Kelly-Springfield Motor Truck Co., which recently was sold to the American Bus & Truck Co., died Jan. 5 at his home in Springfield, O.

* * *

Maj. Walter N. Wellman, president and treasurer of the American Tube Bending Co., New Haven, Conn., died recently at his home there. He was 67 years old and for many years a prominent figure in Connecticut manufacturing circles.

* * *

Benjamin H. Ryder, for 23 years a salesman of the American Steel & Wire Co. at Chicago, died of a heart attack Dec. 26. He was a fellow of the American Institute of Electrical Engineers and a member of the Chicago Engineers' club.

* * *

Charles W. Loomis for 14 years mechanical engineer with the Morgan Construction Co., Worcester, Mass., and previously with the Scovill Mfg. Co. at Waterbury, Conn., died recently while undergoing an operation at the Mayo Bros. hospital, Rochester, Minn.

* * *

Charles A. Haines, past president of the New England Iron and Steel association, president of Dodge, Haley Co., manufacturer of heavy hardware, Boston, and prominent in the iron and steel industry for many years, died recently at his home in Melrose, Mass.

* * *

William K. Kenly, at one time president of the Merchants Steel & Supply Co., Chicago, and later purchasing agent for the Interstate Iron & Steel Co., also of Chicago, died Dec. 30, at Pasadena, Calif., where he had gone for his health. He was 56 years old.

* * *

John Cleveland Osgoode, founder of the Colorado Fuel & Iron Co., Denver, died at his home in Red Stone, Calif., Jan. 4 at the age of 74. He retired as president of the Colorado company in 1903 during the contest between the John G. Gates and Rockefeller interests. He began as an office boy in a cotton manufacturing company in Providence, R. I., and later was with a commission house in New York and a bank in Burlington, Iowa. In 1882 he was interested in Colorado coal mining and in 1887 formed the Colorado Fuel & Iron Co.

* * *

Mahlon S. Kemmerer, president of the Carbon Furnace Co., with a blast furnace at Parryville, Pa., died suddenly Dec. 29 at his Atlantic City residence. Mr. Kemmerer was 82 years

old and recently had been stricken by paralysis. He was prominent chiefly in the anthracite coal industry. He was of the third generation of this family to be in the business. Mr. Kemmerer built the Carbon furnace in 1869. Mr. Kemmerer also was president of the Forest of Dean Iron Ore Co. This company owned the famous Forest of Dean mine on the Hudson river, but the mine has not been operated for 20 years.

* * *

Edwin G. Rust, a brief notice of whose death appeared in IRON TRADE REVIEW, Dec. 31, was widely known in the steel industry as an engineer and operating executive. His industrial record includes affiliation with the

EDWIN G. RUST

Carnegie Steel Co., Colorado Fuel & Iron Co., Jones & Laughlin Steel Corp., Elk Rapids Iron Co., Rust Boiler Co., the Koppers Co., and the Youngstown Sheet & Tube Co. He introduced a water tube boiler now used extensively in the steel industry and which bears his name. He then organized the Rust Boiler Co. to produce and distribute this product. Starting as a machinist's helper in the steel industry he held at various times positions as machinist, draftsman, chief draftsman, master mechanic, chief engineer, general superintendent, vice president and president.

Mr. Rust was born near Leesburg, Va., Oct. 1, 1869. After attending the local schools he attended Kenyon college, Gambier, O., and worked his way through Lehigh university, Bethlehem, Pa., obtaining a degree there in mechanical engineering in 1894. After service in the Spanish-American war he returned to industrial pursuits, although offered a commission in the regular navy. During the World war he served in the production department of the Emergency Fleet Corp. He died Dec. 25 of pneumonia at his home in Youngstown.

* * *

B. A. Storm, manager of the structural department, Morgan Engineering Co., Alliance, O. died Jan. 2, at his home in Alliance, O. aged 43. Mr. Storm was born in Altoona, Pa. He was associated with the Morgan company since 1915. Other companies with which he was connected included the Tennessee Coal, Iron & Railroad Co., Birmingham, Ala., and the Pennsylvania railroad, Altoona, Pa. He was a member of the American Institute of Steel Construction and his last contribution to the technical press entitled "Electric Arc Welding and Its Application to Structural Steel" was presented before the institute at its last annual meeting, White Sulphur Springs, W. Va.

* * *

John Andrew Smith, 62 years old, president of the Smith-Johnson Co., Cincinnati, manufacturer of metal specialties, died at his home in that city Jan. 8. Death followed a stroke of apoplexy which Mr. Smith suffered the day previous to his death. He was to have left on an extended trip to the West Indies on the day he was buried.

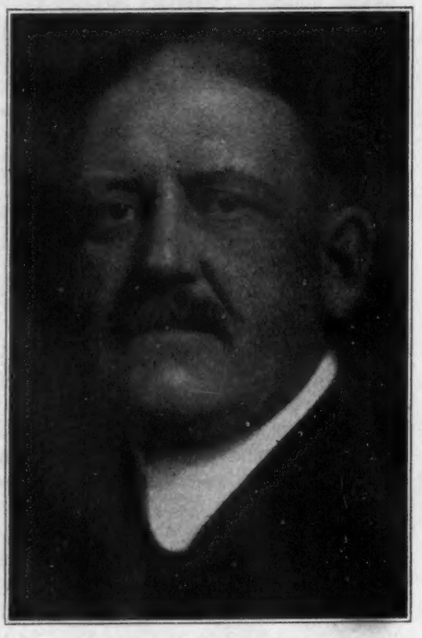
* * *

Charles A. Gould, founder and former president of the Gould Coupler Co., Depew, N. Y., died Jan. 5 of pneumonia at his home in New York. Commodore Gould, as he was known to his friends, was born in Batavia, N. Y., Jan. 13, 1849. Following his education there he came to the United States, settling in Buffalo. He was active in politics. Leaving political office he established the Gould Coupler Co. In addition, he perfected a storage battery named after him, and a car lighting system for railroads. He was commodore of the American Yacht club, and a member of other yacht clubs and social organizations.

* * *

Austin Farrell, manager of the blast furnace department of the Cleveland-Cliffs Iron Co., died at his home at Marquette, Mich., Dec. 25. He was connected intimately with the development of the great charcoal pig iron and wood carbonization industry of the Northwest. To Mr. Farrell also is due much of the credit for the initial work in establishing the by-product coke industry in the United States. He was born April 16, 1858, in Philadelphia. He was graduated from Lafayette college in 1880 with the degree of analytical chemist and also attended Lehigh university. Two friendships made at college had much influence upon Mr. Farrell's after life. Through his Lafayette college associations with the late James Gayley, afterward vice president of the United States Steel Corp., he gained his first position in the blast furnace industry. Through his Lehigh acquaintanceship with M. M. Duncan, he afterward worked with the latter who became manager of the mining department of the Cleveland-Cliffs company.

As assistant to Mr. Gayley, Mr. Farrell was chemist for the Missouri Furnace Co. at St. Louis for three years. In 1884 he became chemist and assistant superintendent at the blast furnace of the E. & G. Brooke Iron



AUSTIN FARRELL

Co. at Birdsboro, Pa. Successively he was manager of blast furnaces at Lynchburg and Roanoke, Va. in 1885-6; at Lewistown, Pa., in 1887; and at Ivanhoe, Va., from 1888 to 1891. In 1892 Mr. Farrell went to the Cleveland-Cliffs Iron Co. in charge of its Pioneer furnace located at Negaunee, Mich., which had been in operation since 1857.

Mr. Farrell was a man of marked individuality. In 1893 a group of people connected with the Cleveland-Cliffs Iron Co. sent him to Germany to investigate the process of making retort oven coke, which at that time was practically unknown in this country. Mr. Farrell visited numerous plants in the Westphalian and Ruhr districts and finally came back with the recommendation that the Otto Hoffman system be adopted. This was followed by the erection of a battery of Otto Hoffman ovens by the Cambria Iron Co. at Johnstown, Pa.

Here and There in Industry

Live Information Which Records the Expansion of Various Lines of Productive Enterprise

STANDARD GAS EQUIPMENT CORP., New York, has bought the plant and business of Rathbone, Sard & Co., Aurora, Ill., manufacturer of gas ranges, doubling the capacity of the former. The Standard corporation was formed in 1924 by merger of William M. Crane Co., Jersey City, N. J., the Baltimore Gas Appliance Corp., Baltimore, and the General Gas Appliance Co., New York. Rathbone, Sard & Co. was formed in 1830.

* * *

ROTARY MFG. CO., Los Angeles, manufacturer of heating appliances, will remove shortly to its new plant at 5718 Long Beach avenue, 80 x 90 feet.

* * *

CHANDLER-TAYLOR CO., Indianapolis, manufacturer of steam engines, is negotiating with eastern interests for a consolidation. William M. Taylor is president.

* * *

ROTARY AIR PUMP CO., Anderson, Ind., recently incorporated with $100,000 capital will manufacture rotary air pumps and compressors, assembling castings made by contract.

* * *

WETTER PIPE CO., Gadsden, Ala., has started operations in its new plant on the site of the former Gadsden car works, burned some time ago. It has 20 pipe floors and 40 fittings floors.

* * *

HAWDOS CORP., Corning, N. Y., manufacturer of shock absorbers, has formed the Hawley Sales Corp. to handle sales of the former company. J. D. Hawdos is president of both concerns.

* * *

SAGINAW STAMPING & TOOL CO., has received a large order for pressed steel pistons for the Buick Motor Co. Other companies, including Chevrolet and Ford, are doing research and testing work on the company's pistons.

* * *

FRANK HODSON, consulting metallurgist, 604 Jefferson building, Philadelphia, has been made exclusive agent in the United States for Adrian de La Cuadra and associates, Santiago and Valparaiso, Chile, for their copper, zinc, gold and silver properties. Senor Cuadra is making a business trip to the United States.

* * *

BYRON JACKSON PUMP CO., Los Angeles, has completed a new plant at Slauson and Santa Fe avenues, on a three-acre site. The plant consists of a machine shop 90 x 280 feet and storage and assembly building 80 x 240 feet.

* * *

REMINGTON BURNELLI CORP., organized to build airplanes, has bought the plant formerly occupied by the Conway Brass & Iron Foundry Co., Broad street, Hartford, Conn., and will make alterations to adapt it to its uses. Thomas F. Barvan is president.

* * *

BEALS, McCARTHY & ROGERS, Buffalo, N. Y., has bought the mill and shops of Walbridge & Co. The equipment will be removed to the purchaser's plant. The Walbridge company will devote its entire facilities to its retail and builders' hardware departments.

* * *

WEST MICHIGAN BRASS CO., Zeeland, Mich., is the new name of the Acme Stamping & Brass Works, incorporated early in 1925. Following its change of name the company has reincorporated, increasing its capital stock to $50,000 and now is erecting a new plant 110 x 134 feet.

* * *

PHOENIX IRON WORKS CO., Meadville, Pa., has been reorganized as the Mead-Penn Iron Works Co., with $500,000 common stock and will resume operations this month. Otto Kohler has been elected president, Lewis Walker vice president, Earl W. McGill treasurer, Wilbur C. Schade general manager. Directors include the officers and the following: H. J. Crawford, Raymond Cross, William T. Gilmore and H. H. James.

* * *

MURRAY OHIO MFG. CO., Cleveland, manufacturer of sheet metal parts for automotive vehicles, has been acquired by Cleveland interests and will be operated independently of the J. W. Murray Mfg. Co., Detroit. C. W. Hannon, vice president of the old company, has been made president. F. J. Hannon has been made vice president, Frank H. Ginn secretary and Thomas Coughlin treasurer. C. L. Bradley, Owen Locke, J. R. Murray and J. W. Murray also are on the board of directors.

* * *

LAKE ERIE ENGINEERING CORP., 268 Perry street, Buffalo, has been incorporated and has taken over the plant and business of the former Buffalo Machine & Iron Co. and will continue it along the same lines. Marine engines, waterworks pumping engines and sugar mill machinery are among its products. J. T. Dillon is president. G. H. Case, J. H. Williams, J. B. Smith and W. L. De Laney have been added to the organization recently. Plate working tools and hydraulic presses have been added to the company's line of products.

* * *

INTER-STATE CAR & FOUNDRY CO., Massachusetts and Brightwood avenues, Indianapolis, recently incorporated, has taken over the foundry department of the Interstate Car Co., and will operate a gray iron foundry. George J. Diver is president, Leo R. Meyer vice president and Frank B. Stout secretary. These officers and their organization have been engaged in operating the foundry and car repair departments of the Inter-State Car Co., and formation of the new company is at the suggestion of Eugene H. Darrach, president of the older company, who has leased the foundry plant to his former employes. Gray iron and semisteel castings will be produced and railroad equipment will be handled as well.

* * *

WESTINGHOUSE ELECTRIC & MFG. CO., East Pittsburgh, Pa., has instituted a prime mover sales department, to be located at the South Philadelphia works. E. D. Kilburn, vice president and general sales manager has appointed the following personnel: Howell Van Blarcom, formerly assistant to the manager of the power department of the South Philadelphia works, manager of the new department; R. E. Carothers, formerly manager of the steam division of the power department at East Pittsburgh, assistant manager; A. H. Ganshird, formerly of the large turbine section at East Pittsburgh, manager of the turbine section of the new department; C. G. Ong., formerly of the central station division, Boston, manager of

small turbine section; P. L. Fetzer, formerly of the condenser section East Pittsburgh, manager of condenser section.

* * *

WALTON FOUNDRY CO. INC., Walton, N. Y., has completed its new foundry and machine shop and operations have been started.

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BOLENE REFINING CO. has bough from the Graver Corp., East Chicago, Ind., two 1000-barrel cracking units for its refinery at Enid, Okla.

* * *

STEARNS MFG. CO., Ludington, Mich., has booked an order for 400 four-cylinder tractor engines from the Huber Mfg. Co., Marion, O. Another order is for 144 engines from the Mead-Morrison Co., East Boston, Mass.

* * *

LUDLUM STEEL CO., Watervliet, N. Y., is adding to its plant. The billet grinding capacity has been doubled, the addition to be ready early in January. A complete exhaust system for removing dust has been installed.

* * *

STROMBERG MOTOR DEVICES CO., 68 East Twenty-fifth street, Chicago, has brought a site at Fifty-fourth avenue and Sixteenth street, Cicero, Ill., and is having plans drawn by N. Max Dunning, 310 South Wabash avenue, for a plant group to cover 21 acres. Charles N. Stiger is president.

* * *

LAHER AUTO SPRING CO. LTD., San Francisco, F. J. Laher president and general manager, will start production Jan. 28 in its sixth and largest plant, located at Oakland, Calif. The plant is equipped with the latest devices for conveying and for treating steel for springs and bumpers. Other plants of this company are at Portland, Ore.; Seattle, Spokane, Wash.; San Francisco and Los Angeles.

* * *

DIRECTORS of Caron Bros. Inc., Montreal, Que., manufacturer of metal products, have elected to their board Donat Raymond, president of the Windsor hotel, Norman J. Dawes, president National Breweries Ltd., L. H. Timmins, vice president, Hollinger Consolidated Gold Mines Ltd. and Joseph Versailles, president National Cement Co. Ltd. The company is extending operations, especially selling a light, water and power plant for farms and country houses.

* * *

JENKINS MACHINE CO., Sheboygan Falls, Wis., has moved its office and works into a new plant. Its products will be handled exclusively by the Yates American Machine Co., Beloit, Wis.

* * *

STUEBING TRUCK CO., Cincinnati, O., has bought the Cowan Truck Co., Holyoke, Mass. Both are large producers of lift trucks and platforms and a new company has been formed to operate the combined plants, to be known as the Stuebing-Cowan Co. Production will be continued at both plants and the main office of the combined companies will be at Cincinnati. W. C. Stuebing is president, W. R. Stuebing vice president and J. R. Harlan, secretary and treasurer.

Coke Ovens in Canada Have Total of 2632

Ottawa, Ont., Jan. 11.—Canada now has 2632 coke ovens, according to a report by the department of mines, division of mineral resources, issued recently. By far the greatest number of these are in British Columbia, where the Crow's Nest Pass Coal Co., Ltd., has 940 alone. Most of the ovens are beehive, although various makes of by-product ovens are used. British Empire Steel Corp., Ltd., operates 490 ovens at its works in Sydney and its Sydney mines. Following is a list of the companies owning or operating coke ovens:

Operator	Address	Number of Ovens and Type	Location of Ovens
Nova Scotia			
*British Empire Steel Corp., Ltd.	Glace Bay	160 Bernard 30 Bauer	Sydney Mines*
British Empire Steel Corp., Ltd.	Glace Bay	120 Otto Hoffman (United). 180 Koppers.	Sydney
Quebec			
			Montreal†
Ontario			
		100 Bee-hive	Port Arthur**
Algoma Steel Corp., Ltd.	Sault Ste. Marie	110 Koppers 50 Wilputte.	Sault Ste. Marie
Hamilton By-Products Coke Ovens, Ltd.	Hamilton	25 Semet-Solvay	Hamilton
Steel Co. of Canada, Ltd.	Hamilton	80 Wilputte	Hamilton
Manitoba			
Winnipeg Electric Co.	Winnipeg	—Koppers	Winnipeg
Alberta			
		216 Bee-hive	Coleman**
		50 Bernard	Lille**
		101 Mitchell	Passburg**
British Columbia			
Crow's Nest Pass Coal Co., Ltd.	Fernie	454 Bee-hive 486 Bee-hive	Fernie Michel
		240 Bee-hive	Hosmer**
Canadian Collieries, (Dunsmuir), Ltd.	Victoria	200 Bee-hive	Union Bay*
Granby Con. Mg., S. & Power Co., Ltd.	Vancouver	30 Lomax	Anyox (Graves Point)

*Idle 1924. **Have been idle for a number of years. †Proposed.

Coke is also made at the following points in Canada where plants are primarily engaged in the production of illuminating gas. This by-product is usually sold locally as a domestic fuel.

Halifax, N. S.: Nova Scotia Tramway & Power Co., Ltd.

St. John, N. B.: New Brunswick Power Co. New plant proposed on site of the Maritime Nail Co.

Montreal, Que.: Montreal Light, Heat & Power Consolidated, Box 1710—2 plants.

Ontario plant: Coburg, Hyrod-Electric Power commission; Guelph, Board of Light & Heat commissioners; Kitchener, Kitchener Light commission; London, City Gas Co.; Ottawa, The Ottawa Gas Co.; Owen Sound, Public Utilities Commission; Port Hope, The Port Hope Gas Co.; St. Thomas, St. Thomas Gas department; Stratford, Stratford Gas Co.; Toronto, Consumers Gas Co.—2 plants.

Brandon, Man.; Canada Gas & Electric Corp.

British Columbia plants: Nelson, City of Nelson Gas Works; New Westminster, New Westminster Gas Co., Ltd.; Vancouver, Vancouver Gas Co., Ltd.; Victoria, Victoria Gas Co., Ltd.

Tin Plate Higher, While Cans Are Reduced

New York, Jan. 12.—The American Can Co. has announced term contract prices f.o.b. its plants, for standard sizes of sanitary cans for the central and eastern parts of the United States, effective Jan. 2, 1926, as follows: No. 1, $15.30 per 1000; No. 2, $21.34 per 1000; No. 2½, $26.91 per 1000; No. 3, $29.09 per 1000; No. 10, $64.05 per 1000. The new prices represent the following reductions: No. 1, 75 cents per 1000; No. 2, $1 per 1000; No. 2½, $1.75 per 1000; No. 3, $1 per 1000, and No. 10, $2 per 1000.

This announcement has occasioned considerable surprise in view of the fact that the cost of tin plate to consumers will be higher in 1926 than in 1925. While the base price was reaffirmed at $5.50 per base box at Pittsburgh for first half of 1926, consumers generally are being allowed smaller differentials under the base price, so that the actual cost of the tin plate to consumers will be higher in the coming year.

Pipemaker Enlarges Plant

For the fifth time since its establishment in 1878, James B. Clow & Sons, Chicago, makers of pipe, have opened new headquarters. The

new location is at Lake street, Talman avenue and Fulton street, Chicago. With his son W. E. Clow, James B. Clow organized the company becoming western sales agents for several large eastern manufacturers. In 1889 Mr. Clow went into the cast iron pipe business, building a plant at Newcomerstown, O. A plant has been added since at Coshocton, O. The new works at Chicago includes a modern brass foundry and marble mill. Management of the company now is under supervision of W. E. Clow, president and his sons, W. E. Clow, Jr., and Kent S. Clow, vice presidents.

Authorizes Extension to By-Product Ovens

Officials of the Weirton Steel Co., Weirton, W. Va. have authorized the appropriation of $2,250,000 for the construction of 49 additional by-product coke ovens. Contracts for the oven extension have been awarded to the Koppers Co., Pittsburgh. The Weirton company recently purchased the structural steel for the extension to its steelmaking building to house four additional 100-ton open-hearth furnaces. The foregoing is part of the extensive program of improvements planned by the Weirton company last August. Additional work projected by the company includes an 800-ton blast furnace bringing its total pig iron capacity to 550,000 tons annually, more sheet mills to widen the range of production and a tube mill of the pilger type. Loading and unloading docks and a new storage yard at the Weirton division of the company to be equipped with overhead oranes to handle 100,000 tons of scrap and pig iron also are planned.

Wages Likely to Continue at Present Levels

At the beginning of 1926, the wholesale price situation appears unlikely to have any immediate effect upon wage levels, and cost of living increases are likely to tend toward the maintenance of the present wage levels rather than toward an increase in them, says the National Industrial Conference board in an analysis of the wage outlook. The statement continues:

"Production is at a high and efficient level, without evidence of immediate labor shortage. Except for certain highly unionized industries in which peculiar conditions exist, there are no factors which should cause any marked deviation in the general level of wages in the immediate future. Barring an increase in productive activity, sufficient to offset improved industrial efficiency, and barring a sharp increase in the cost of living the general level of wages is likely to remain for sometime at the level which has withstood the depression of 1924 and the substantially improved conditions of 1925."

Aluminum Company Buys Tank Equipment

Toronto, Ont., Jan. 12.—President William Harty, of the Canadian Locomotive Co. of Kingston, Ont., has announced that the tender of the company for tank equipment for the Chute-a-Caron power development of the Aluminum Co. of America, amounting to over $250,000 has been accepted and orders for material have been placed. Work on the contract will begin about Jan. 15.

The Ontario Malleable Co. Ltd. of Ostrawa, Ont., one of the largest and best equipped malleable foundries in the country has been acquired by Neil R. Sinclair and associates of Toronto and New York for a cash price stated to be approximately $1,000,000. Mr. Sinclair and associates recently acquired control of the McKinnon Industries Ltd. of St. Catherines, and the J. H. Williams Co. Ltd., and it is understood that these companies will be operated under one management.

Gustav O. W. Nordblom, a Swedish manufacturer of steel products, is equipping a plant in Winnipeg for the production of garden tools and light farm implement. He placed orders in Chicago for such portions of the equipment as were not procurable in Canada. It is expected that the factory will be in operations in February, and substantial orders already have been received.

Mexico To Irrigate Land

President Cailles of Mexico has proposed a plan for extensive irrigation of Mexican farmlands. He proposes to expend 20,000,000 pesos a year for three years to this purpose, 20 large tracts to be irrigated. J. G. White Engineering Corp., New York, has been retained to design and supervise the construction of the major portion of this program. Preliminary engineering work has been started.

Reorganize Chain Firm

J. B. Carr-Woodhouse Co., Inc., Troy, N. Y., manufacturer of chains, has been reorganized under the name of the Carr Chain Works, Inc. C. W. Tillinghast Barker of J. M. Warren & Co. is president; Edward C. Doyle, of Sweet & Doyle Foundry & Machine Co., treasurer, and David B. Plum, Troy Record Co., secretary. John H. Woodhouse is vice president and general manager. In addition to these the board of directors includes James W. Fleming, Charles H. Stone and H. Judd Ward.

France Sells Most Pipe to America

COMPETITION of foreign cast iron pipe with that of American makers was concentrated during 1925 in France, the chief exporter being the Pont-au-Mousson works. In 1924 France shipped but 22,701 tons to the United States compared with 36,198 tons in 1925, according to data just compiled by the iron and steel division of the department of commerce. In 1924, Belgium shipped 22,674 tons to the United States, whereas in 1925 only 5956 tons was imported by American consumers. Los Angeles port dropped in pipe imports from 26,076 tons in 1924 to 9926 tons in 1925, falling behind New York in the latter year. New York's imports increased from 3006 tons to 18,894 tons. 1925 saw the penetration of foreign pipe further inland in the United States, Michigan taking 3200 tons. Accompanying are comparisons of pipe imports by countries of origin and customs districts of receipts for 1925 and 1924. Totals for 1925 include the 11-month period January to December.

TOTALS BY COUNTRIES OF ORIGIN
(Tons)

	1925*	1924
Belgium	5,956	22,674
France	36,198	22,701
United Kingdom	90	1,300
Canada	1,711	42
Cuba	.....	9
Germany	.....	166
Netherlands	9	8
Switzerland	81	.....
Totals	44,045	46,900

*January through November.

TOTALS BY CUSTOMS DISTRICTS
(Tons)

	1925*	1924
Los Angeles	9,926	26,076
San Francisco	2,228	2,039
Porto Rico	.....	13,748
New York	18,894	3,006
Washington	656	459
Philadelphia	68	146
Maine and New Hampshire	2	1,100
Massachusetts	5,276	144
Ohio	.....	10
Buffalo	.....	3
Sabine	.....	161
St. Louis	.....	8
Vermont	1,482	.....
St. Lawrence	1,979	.....
Maryland	198	.....
Michigan	3,200	.....
Oregon	135	.....
Chicago	1	.....
Totals	44,045	46,900

*January through November.

Industrial Business Changes

CAMPBELL TRANSMISSION CO., Buchanan, Mich., has been reorganized as the Campbell-Ollier Transmission Co. and the plant will be removed to South Bend, Ind., the experimental and designing departments remaining at Buchanan. The company makes a shaft transmission for automobiles and hoisting machines.

* * *

Metal Store Front Construction Co., New York, has changed its name to the Zouri Drawn Metals Co. of New York.

* * *

Chelsea Foundry Co., Chelsea, Mich., has bought one unit of the plant of the Lewis Spring & Axle Co. for foundry expansion.

* * *

Geiser Mfg. Co., Waynesboro, Pa., has taken over the Geiser plant of the Emerson-Brantingham Co. at that place.

* * *

Bunting Iron Works, Berkeley, Calif., has opened a sales office at 465 East Third street, Los Angeles, in charge of H. H. Lukins.

* * *

Rotary Mfg. Co., San Franciso, manufacturer of heating appliances, will move into its new plant shortly, at 5718 Long Beach avenue, one story, 80 x 90 feet.

* * *

Ginsberg-Penn Co., 18 East Forty-first street, New York, has been made sales agent for the Ideal Concrete Machinery Co., Cincinnati.

* * *

Herman M. Brown Co., distributor of contractors' equipment, 502 Hubbell building, Des Moines, Iowa, has moved its offices to 212 Twelfth street.

* * *

Eccles & Davies Machinery Co., Los Angeles, Calif., has been incorporated by Chris Eccles and George A. Davies and has succeeded the Eccles & Smith Co.

* * *

The New Bedford Steel & Supply Co. has opened a new modern warehouse at the corner of Commercial and Front street, New Bedford, Mass., where they will handle a complete stock of the usual steel warehouse commodities.

* * *

Winchester Repeating Arms Co., New Haven, Conn., has formed a subsidiary, the National Refrigerating Co., which will manufacture refrigerating apparatus.

* * *

David H. Smith & Sons, iron and steel jobbers, Brooklyn, have established a branch warehouse at West Palm Beach, Fla. David H. Smith is in charge and a full stock has been provided.

* * *

Browning Crane Co., Cleveland, manufacturer of locomotive cranes and buckets, has opened a branch office at 1201 Peoples Bank building, Pittsburgh, in charge of D. C. Harris.

* * *

Becker Steamship Co., operator of a fleet of ore boats on the Great Lakes, has removed its offices from the Rockefeller building to 711 Leader-News building, Cleveland.

* * *

Southern Machinery & Supply Co., Montgomery, Ala., and the Muscle Shoals Supply Co., Sheffield, Ala., have been appointed distributers in Alabama for the Construction Machinery Co., Waterloo, Iowa.

* * *

Kinnear Mfg. Co., Columbus, O., manufacturer of steel rolling doors and fire resisting equipment, has established a branch at 380 Saunders-Kennedy building, Omaha, Nebr., in charge of C. L. Brobst.

* * *

Andrews Heating Co., manufacturers of hot water and steam heating systems, tanks and other products, University avenue and Twenty-fifth avenue, Minneapolis, Minn., has sold its plant to the Russell Grader Mfg. Co., builder of road machinery, and will remove to its new plant at 2601 Southeast Fourth street.

* * *

Minneapolis Equipment Co., Minneapolis, Minn., distributors in the Northwest of various eastern lines of contractors' equipment, has moved to a new office and warehouse at 520 Southeast Second street.

* * *

Percival Steel & Supply Co., Los Angeles, formerly the Percival Iron Co., J. Phil Percival president, will remove March 1 into its new plant at 4600 Santa Fe avenue, consisting of three warehouse buildings.

* * *

Harnischfeger Sales Corp., Milwaukee, cranes and excavators, has removed its sales office at Birmingham, Ala., from 431 First National Bank building to 401 Pioneer building. J. VanBuskirk is manager.

* * *

Stefco Steel Co., Michigan City, Ind., manufacturer of ready-built steel structures, has opened an office at 1231 Athletic Club building, Dallas, Tex., to handle business formerly done by the office at Tulsa, Okla. Jamerson & Ebler are in charge of the office.

* * *

Aldrich Pump Co., 1 Pine street, Allentown, Pa., has bought the designs, patterns, patents and goodwill of the Earle Gear & Machine Co., Philadelphia, as they apply to Earle centrifugal pumps. Other products of the Earle company will be manufactured as in the past.

* * *

Pennsylvania Crusher Co., Philadelphia, has moved its general offices to the nineteenth floor of the new Liberty Trust building. Broad and Arch streets. The business was started in 1897 by George W. Borton, became a partnership as Borton & Tierney and was incorporated under its present name in 1905.

* * *

Nachman Spring Filled Co., manufacturer of coiled spring construction, Chicago, has opened a branch factory in the Central manufacturing district, Los Angeles. The company recently took over the business and equipment of the Cliggitt Mfg. Co., E. J. Cliggitt, its president, being transferred to the main offices at Chicago.

Construction and Enterprise

Concise and Timely Business Building Opportunities from the Field of Industry

Where additional information is presented, reference is made to date of issue in which previous item appeared.

ANNISTON, ALA.—Anniston Soil Pipe Co. has given contract to Ogletree Construction Co. for an addition 50 x 80 feet.

BIRMINGHAM, ALA.—G. C. Phillips Tractor Co., 116 North Seventeenth street, manufacturer of road building machinery, has bought a site and will build a 1-story plant with provision for two additional stories.

GADSDEN, ALA.—Etowah Foundry & Machine Co., R. B. Taliaferro president, is having plans made to rebuild its burned plant.

GADSDEN, ALA.—A. & J. Mfg. Co., J. C. Greene secretary, Locust street, will build an office building and gas range department 50 x 140 feet, and a warehouse addition 80 x 130 feet. Japanning oven will be installed by the Swarthout Co., Cleveland.

SHEFFIELD, ALA.—King Co., Chicago and St. Joseph, Mo., manufacturer of street lighting standards, will build a plant here with capacity for 200 standards daily.

LOS ANGELES—Percival Iron Works has bought two acres at 4600 Santa Fe avenue and is building a 2-story plant 128 x 140 feet and three warehouses 70 x 160 feet each.

MARTINEZ, CALIF.—Contra Costa county will build a 1-story machine shop 65 x 125 feet for repairing of road equipment. R. R. Arnold is county surveyor.

SAN FRANCISCO—Electric Storage Battery Co., 1526 Bush street, will build a 1 and 2-story factory. H. H. Meyers, Kohl building is architect.

FAIRFIELD, CONN—Kilborn-Sauer Co., automobile lamp manufacturer, is having plans made for rebuilding its burned plant.

SOUTHINGTON, CONN.—Standard Steel & Iron Co. will begin operations shortly at the former plant of the Aetna Nut Co., producing bars and a second mill will be put in operation shortly.

ST. AUGUSTINE, FLA.—The Florida East Coast railroad is inquiring for structural steel for locomotive repair shops to be erected here.

BLOOMINGTON, ILL.—Vose Engine Co., has been incorporated to manufacture internal combustion engines by Walter F. Vose, Parry C. Shupe and Egbert B. Hawk. Egbert B. Hawk, 217 Unity building, is correspondent.

BLOOMINGTON, ILL.—Scanlan Handy Heater Co., 1406 East Olive street, has been incorporated with 500 shares of no par value to manufacture electric appliances, by Chester J. Scanlan, Charles K. Woodin and Nelle T. Scanlan. Richard F. Dunn, 404 Unity building, Bloomington, is correspondent.

CHICAGO—Hunter Watch Co., 112 West Adams street, has been incorporated to manufacture watches and clocks by M. E. Franclig, E. E. Gloof and Albert G. Ziesk.

CHICAGO—Bell & Howells, 1801 Larchmont avenue, manufacturer of motion picture machines, has started construction of a 6-story addition, 67x85 feet, and remodeling of its 3-story plant.

CHICAGO—Chicago Rivet & Specialty Co., 1820 South Fifty-fourth street, has given general contract to Holton Seelye & Co., 140 South Dearborn street, for a 1-story plant, 120x 140 feet.

CHICAGO—Your Cab Co., 417 East Thirty-ninth street, has awarded a general contract to Holton Seelye Co., 140 South Dearborn street, for a 1 and 2-story service station, machine shop and general offices.

CHICAGO—Cinch Mfg. Co., Walter J. Rayner president, 2335 West VanBuren street, will build a 2-story addition 62 x 125 feet. General contract to Broline Nolin, 5 North LaSalle street.

CHICAGO.—Waage Electric Co., 5100 West Ravenswood avenue, has been incorporated with $150,000 capital to manufacture electric heating devices by C. P. Waage, Gilbert Waage and Edward Florence. Townley, Wild, Campbell & Clark, 105 South LaSalle street, are correspondents.

CHICAGO—Garley Steel Co., 2755 West Thirty-first street, has been incorporated with $100,000 capital and 1000 shares no par value to manufacture and deal in iron, steel and metals by Roy Garley Hird, C. O. Nerad and Frank H. T. Potter Potter & Sherwood, Marquette building, are correspondents.

CHICAGO—Scurlock Differential Corp., 332 South Michigan avenue, has been incorporated with $175,000 capital to manufacture differential gears, steering gears and other gears by John W. Fulton, John W. Fulton Jr. and R. S. Dean. Lewis Hicurtock, 343 South Dearborn street, is correspondent.

CHICAGO—Zeleny Thermometer Co., 542 South Dearborn street, has been incorporated with $50,000 capital to manufacture mechanical and electrical equipment by L. H. Desisles, Hayes McKinney, George L. Crear. McKinney, Lynde & Crear, 105 South La Salle street, are correspondents.

CHICAGO — Watkins Rebabbitting Service of Chicago has been incorporated with $10,000 capital to manufacture automotive bearings by George Townley, Joseph H. Pleck and Marion B. Stahl. Kirkland, Patterson & Fleming, Union Trust building, are correspondents.

CHICAGO—J. J. Ryan & Co., 104 South Jefferson street, has been incorporated with $100,000 capital to operate a foundry and machine shop business and produce castings and machinery by Edward A. Ryan, Joseph J. Ryan and Leo A. Ryan, Condon & Livingston, 231 South LaSalle street, are correspondents.

CHICAGO—Inland Wire Products Co., Winchester and Thirty-ninth streets, has been incorporated with $5000 capital to manufacture steel, copper and metal wires by Thomas Mathiesen, Walter Mathieson and Robert F. Howe. Daniels, Boddie, Tone & Challenger, 38 South Dearborn street, are correspondents.

CHICAGO — Standard Metal Weatherstrip Co., 25 North Dearborn street, has been incorporated with $3000 capital to manufacture metal weather strips, screens, shades and doors by Meyer Katzman, Morris Shapiro, Henry Shapiro, Harry Rothman and Leo Sigel. Samuel Koeningsberg, 502 Ashland block, is correspondent.

EVANSTON, ILL.—National Biscuit Co., Ray E. Tomlinson, president, 85 Ninth avenue, New York, will take bids soon on additions and alterations to its machine shop plant here.

FREEPORT, ILL.—Structo Mfg. Co., 60 Powell street, is remodeling and adding to its plant a building two stories, 67x98 feet.

MOLINE, ILL.—Moline Pressed Steel Co., Fred Lundahl manager, will build a 1-story enameling plant 40 x 80 feet. General contract to Axel Carlson Co., Peoples Trust building.

PERU, ILL.—Chamberlain Metal Weatherstrip Co., Charles H. Brodin, president and general manager, 1644 Lafayette street, Detroit, is building a 2-story addition to its plant.

WAUKEGAN, ILL.—Waukegan Foundry Co., M. R. Barr, manager, Terminal building, is building a 1 and 2-story foundry, 87x254 feet.

ANDERSON, IND.—Philip Cook & Sons Inc. has been incorporated to manufacture machinery and devices by Philip Cook, Theodore Cook and William Cook.

CONNERSVILLE, IND.—Indianapolis Lamp Co., W. F. Thomas, president, Nineteenth and Western avenue, will build a 1-story addition.

GREENCASTLE, IND. — American Zinc Products Co. has been incorporated with $10,000 capital to deal in ores, metals and minerals by C. W. Martin, C. H. Stewart, R. P. Stranahan, A. G. Brown and B. F. Corwin.

MISHAWAKA, IND.—American Foundry Co. is building a 2-story plant 100 x 200 feet.

RUSHVILLE, IND.—Dill Foundry Co. will build a foundry 140 x 180 feet.

DAVENPORT, IA.—The Blackhawk Foundry & Machine Co. will build new double deck modern foundry 110x300 feet. The first unit, to be built in spring, to be 100x100.

DES MOINES, IA.—City council will purchase $525,000 of water pipe and install in 1926. Charles S. Denman, is manager of waterworks system.

FRASER, IA.— Fort Dodge, Des Moines & Southern railroad is building a 30,000-gallon steel water tank to cost $10,000.

MASON CITY, IA.—Lapiner Motor Co. has let general contract to George Peterson & Son for 1-story 82x127 reinforced concrete garage, to be built at corner of Delaware and Second avenues.

MASON CITY, IA.—Crane Co., plumbing and heating fixtures, have awarded general contract to Henry Brown for 1-story 136x140 warehouse at Eighth street and Delaware avenue.

NEWTON, IA.—The Maytag Co. has let general contract to Lanning Construction Co., Oskaloosa, for 1-story, 190x280 brick and steel foundry. Henry Raeder, 20 West Jackson boulevard, Chicago, is the architect.

OSKALOOSA, IA.—The foundry of the Iowa Valve Co. burned Nov. 21, and will be rebuilt in the spring.

OSKALOOSA, IOWA—Western Mfg. Co., J. B. McMullen manager, is considering

Iron and Manganese Ores and Minerals

Iron Ore

LAKE SUPERIOR ORES

Per Gross Ton Lower Lake Ports

Old range bessemer, 51½ per cent iron	$4.55
Mesabi bessemer, 51½ per cent iron	4.40
Old Range nonbessemer, 51½ per cent iron	4.40
Mesabi nonbessemer, 51½ per cent iron	4.25

EASTERN LOCAL ORES

Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic 53 to 63 per cent	9.00 to 10.00
Copper free low phosphorus 58 to 65 per cent	nominal

FOREIGN IRON ORE

Cents per unit, f.o.b. cars Atlantic ports

Spanish low phosphorus, 52 to 54 per cent	9.00 to 10.00
Algerian low phosphorus, 52 to 54 per cent	9.75 to 10.00
Riff low phosphorus, 65 to 66 per cent	9.50 to 10.00
Swedish and Norwegian low phosphorus, 68 per cent	11.00 to 11.50
Swedish foundry or basic, 66 to 68 per cent	9.00 to 10.00
Spanish foundry or basic, 50 to 54 per cent	8.50 to 9.50
Algerian foundry and basic, 50 to 54 per cent	8.50 to 9.00

Manganese Ore

Prices do not include duty at rate of 1 cent per pound of metallic manganese contained.

Brazilian, minimum 47 per cent.....nominal
Indian minimum 47 per cent.....nominal
Caucasian, 53 to 55 per cent.....
....Washed, 41 to 43 cents c.i.f. tidewater

Fluor Spar

85 and 5 per cent grade

Washed gravel, Kentucky and Illinois mines, per net ton..	$17.50
Washed gravel, imported duty paid eastern tidewater, per net ton	19.00

sketches for a plant for the manufacture of air pumps.

STORM LAKE, IA.—The city council is considering building a municipal light and power plant to cost $82,000 and a distribution system to cost $88,000.

WICHITA, KANS.—Coleman Lamp Co., C. W. Coleman president, Second and St. Francis streets, is building a 4-story plant 60 x 135 feet.

WICHITA, KANS.—Service Brass Co., 331 North Mosley street, is building a 1-story foundry addition 50 x 70 feet. General contract to Walter C. Ramsey, 808 Litchfield street.

LEXINGTON, KY.—Thomas Reading has bought a site and will build at once a machine shop.

BOSTON, MASS.—Julian d'Este, 10 Spice street, will build a 1-story foundry plant.

GARNER, MASS—Pierce & Cheswood, 32 Savage street, are rebuilding their machine shop recently damaged by fire.

INDIAN ORCHARD, MASS.—Chapman Valve Mfg. Co. will build a 2-story addition 23 x 42 feet to its plant at 203 Hampshire street.

WEST LYNN, MASS.—General Electric Co. is planning a foundry addition and a galvanizing plant 28 x 70 feet.

BENTON HARBOR, MICH.—Benton Harbor Malleable Foundry is having plans made for an addition to its drop forge shop and core room.

DETROIT—Michigan Tool Co. is having plans made by Rasem & Ereier, architects, for a 1-story factory building.

DETROIT—Wayne Scrap Iron & Metal Co. has been incorporated with $20,000 capital by Nettie Newman, Harry S. Kowalsky and Ruben B. Newman, 1478 Glynn court.

DETROIT—Detroit Metal Specialty Corp. has been incorporated with $100,000 capital to manufacture metal products by David M. Ireland, William C. Ireland and Neil McMillan, 2170 East Jefferson avenue.

DETROIT—Electric Refrigerator Corp. has been incorporated with 2,000,000 shares no par value to manufacture ice machines by James V. Oxtoby, Merlin Wiley and Marble J. Morell, 4334 Leslie avenue.

DETROIT—Standard Pattern Plate Co. has been incorporated with $2000 capital to manufacture aluminum and brass products by Gabriel Jobbaggy, Julia H. Parker and John Kuehnle, 4011 Whitney avenue.

DETROIT—Wise Industries Inc., manufacturer of metal products and plated ware, has let a general contract to the Krieghoff Co., 4815 Bellevue avenue, for a 2-story addition 50 x 100 feet.

DETROIT—Cowan Sheet Metal Works has been incorporated with $30,000 capital to manufacture sheet metal products by Edward Cowan Jr., Detroit; Edward Cowan, Romeo, Mich., and Grover F. Sisung, 3511 Third avenue, Detroit.

GRAND RAPIDS, MICH.—Michigan Bell Telephone Co., has been appropriated $7,000,000 for extensions and improvements in state during 1926.

ADA, MINN.—City will build a new steel water tower for water and light department. A. O. Guren is city clerk.

BLUE EARTH, MINN.—Blue Earth Canning Co. will build a canning factory to cost $100,000. Architect not selected.

DULUTH, MINN.—Zollner Machine Works has awarded general contract to Geo. H. Lounsberry, 322 East Superior street, for 1-story 50x60 brick addition to machine shop at 1718 West Superior street to cost $10,000.

DULUTH, MINN.—Susquehanna Ore Co. has been incorporated with a capital of $1,000,000 by F. B. Richards, W. A. Maier, H. L. Pierce, all of Cleveland, to engage in iron ore operations.

DULUTH, MINN.—Giliuson, Ellingson & Erickson, architects, Lonsdale building, are making plans for a 3-story 100x140 reinforced concrete garage to be built by the Service Motor Co., at Third avenue East and First street, to cost $40,000.

EAST GRAND FORKS, MINN.—Ottertail Power Co., Fergus Falls, will build power plant of two units of 2000 horsepower each to cost $400,000.

GRAND RAPIDS, MINN.—C. K. Blandin, of Itasca Paper Co., Dispatch building, St. Paul, is taking bids for steam turbine to be used in enlarging present mill.

HOPKINS, MINN.—Minneapolis Threshing Machine Co., has awarded general contract to C. F. Haglin & Sons Co., 226 Lumber Exchange building, Minneapolis, for 2-story brick and mill factory 60 x 100 feet.

MINNEAPOLIS, MINN.—Lenhart Wagon Co., 2600 University avenue SE, is building a 1-story metal clad storage shed 44 x 72 feet.

MINNEAPOLIS, MINN.—The Crary Co., Inc., has been incorporated at a capital of $50,000 by Howard W. Kingston to manufacture machinery.

MINNEAPOLIS, MINN.—Gust Lagerquist & Sons, 1314 Water street NE, are building a 1-story 54x50 brick addition to its foundry and pattern shop at a cost of $5,000.

MINNEAPOLIS, MINN.—Hicks Samuelson Co. has been incorporated with a capital of $100,000 by John Samuelson to manufacture mechanical appliances.

MINNEAPOLIS, MINN.—Economy Heat & Unit Co. Inc. has been incorporated by L. H. Fawkes with a capital of $100,000 to manufacture furnaces.

MINNEAPOLIS, MINN—V. E. Matson has let general contract to the Jewell Co., Inc., 228 McKnight building, for 1-story 50x120 brick and concrete garage at 2815 East Franklin avenue to cost $20,000.

MONTGOMERY, MINN.—Bids will soon be taken on reinforced concrete and steel power plant and canning factory to be built by the Montgomery Canning Co., to cost $50,000. Ralph W. Richardson, 301 Zenith building, St. Paul, is engineer.

ST. PAUL, MINN.—Arthur E. Eggert, city purchasing agent, 301 Commerce building, is taking bids on seven 2½ ton drop frame steel trailers.

ST. PAUL, MINN.—The general contract has been awarded by the Gopher Stamp & Die Co., to N. P. Fransen & Co., 630 Endicott building, for a 2-story brick and concrete factory, 50 x 119 feet.

ST. PAUL, MINN.—American Car & Foundry Motors Co. has been incorporated in Delaware to manufacture motor buses and trucks with 100,000 shares of $100 value and 300,000 shares of no par value.

ST. PAUL, MINN.—Twin City Rapid Transit Co., will build garage at Third and St. Peter streets in spring. To be several stories of reinforced concrete and steel with elevators and ramps, shop and store rooms in basement.

ST. PAUL, MINN.—The Schurmeier-Whitney Co., motor truck body builder, has awarded general contract to Lovering-Longbotham Co., 607 Builders Exchange building, for 1-story brick and concrete factory building near new Ford plant 100 x 130 feet. Toltz, King & Day, Inc., are architects.

ST. PAUL, MINN.—Paul Steenberg Construction Co., 915 Builders Exchange, was awarded general contract for 2-story 100x300 reinforced concrete and fireproof factory and warehouse building opposite new Ford plant, to be built by the Motor Power Equipment Co., at cost of $100,000. C. H. Johnston, 715 Capital Bank building, is the architect.

VIRGINIA, MINN.—Minnesota Power & Light Co. has awarded general contract to

J. D. Harrold, 127 East First street, Duluth, for power and light plant.

JOPLIN, MO.—Bunker Hill & Sullivan Co. is planning erection of an electrolytic zinc plant here.

KANSAS CITY, MO.—Heuler Wire & Iron Works Inc. has been incorporated by Carl A. Heuler, 714 Ridge Arcade building, and associates.

ST. LOUIS—Oil Heat Products Co. has been incorporated to manufacture oil burners by James G. Doyle, 3830 Juniats street.

ST. LOUIS—Practical Guard Co. has been incorporated with $100,000 capital to manufacture safety devices by M. P. Daven, 1435 North Twenty-fourth street.

GLACIER PARK, MONT.—Great Northern Railway Co., St. Paul, Minn., will build a terminal at Glacier National Park of reinforced concrete and steel and to contain several tracks on which sleeping cars can be parked, to cost $100,000. T. D. McMahon, 1215 Railway building, St. Paul, Minn., is the architect.

MALTA, MONT.—The city clerk will soon take bids on a municipal light and power plant and distribution system.

DAWSON, NEB.—City council will soon take bids on 35,000-gallon steel water tank and piping system to cost $25,000.

GRAND ISLAND, NEB.—Kent Engineering Co., 718 Builders Exchange, Minneapolis, has been awarded contract to furnish boilers and mechanical stokers in city power plant to cost $60,000. Pillsbury Engineering Co., 2344 Nicollet avenue, Minneapolis, and 716 Capital Bank building, St. Paul, is the engineer.

LINCOLN, NEB.—Plans are being made for a heating plant to be used by the state capital and state university jointly and to cost $250,000.

NORFOLK, NEB.—Chicago & Northwestern railroad will build a water softener plant at railway yards to be 112x52 with a capacity of 125,000 gallons and to cost $20,000.

CAMDEN, N. J.—Franklin Oil Burner Corp. has been incorporated with $500,000 capital to manufacture oil burning devices by William Zink, William E. Morgan and Helen G. Braun. Herbert J. Koehler, Camden, is attorney.

DOVER, N. J.—Dover Boiler Works has been incorporated with $500,000 capital to manufacture boilers and steel plate work by William F. Birch, William D. Birch and Floyd M. Diehl. King & Bodt, Morristown, N. J., are attorneys.

FLEMINGTON, N. J.—Universal Joint Co., Plainfield, N. J., will build a 2-story addition 65 x 100 feet.

JERSEY CITY, N. J.—Brady Brass Co., Fourteenth and Henderson streets, brass and bronze castings, is building a 2-story addition 25 x 76 feet. Joseph Jewkes & Son, 676 Montgomery street, has the general cnotract.

JERSEY CITY, N. J.—F. Krause & Co. has been incorporated with $50,000 capital to manufacture wire by Frederick Krause, Barbara Krause and William Manneman, Jersey City, and Alphonse G. Koelble, New York.

LEBANON, N. J.—Escel Foundries has been incorporated with 1000 shares no par value to produce iron and steel castings. Edwin J. Sovereign, Frank Sowers and May R. Sowers. Richards & Affeld, New York, are attorneys.

TRENTON, N. J.—DeLaval Separator Co., 165 Broadway, New York, is building a 1-story foundry, 122x202 feet.

BROOKLYN, N. Y.—O. K. Tool Co. has been incorporated with 4000 shares at $100 each and 5000 common no par value.

BROOKLYN, N. Y.—Hayward Mfg. Co. has been incorporated with $50,000 capital to operate a foundry and machine shop by I. M. Hayward, W. F. Hayward and W. H. Hayward. Shiland, Hedges & Pelham, 149 Broadway, are attorneys.

DUNKIRK, N. Y.—Marsh Valve Co., West Fourth street, W. C. Marsh president, is having sketches made for a 1-story addition.

JAMAICA, N. Y.—Alumnite Flexible Flue Cap Co. has been incorporated with $5000 capital by M. L. O'Brien, A. J. McCarthy and D. A. Lucey. J. B. Merrill, Jamaica, is attorney.

MASPETH, N. Y.—LaRose & Sons, 9 Wycoff street, Brooklyn, N. Y., are having plans made for a factory and garage 1 and 4-story, 100x100 feet.

NEW YORK—Federal Bridge Corp. has been incorporated with $5000 capital by J. Sweetnam, W. Devine and G. Maher. S. Fox, 112 West Forty-second street, is attorney.

NEW YORK—I. Greenbaum & Sons Co., has been incorporated with $150,000 capital to manufacture plumbing supplies by I. Greenbaum, R. Greenbaum and M. Greenbaum.

NEW YORK—Prospect Iron Works has been incorporated with $20,000 capital by R. C. McFall and G. G. King. C. E. Smith, 258 Broadway, is attorney.

NEW YORK—Testrite Instrument Co. has been incorporated with $80,000 capital to manufacture scientific instruments by H. Neuwirth, C. R. Neuwirth and J. Bernstein.

NEW YORK—Manhattan Die Casting Co. has been incorporated with $30,000 capital by W. Maltsoff, M. Maltsoff and S. Paletz. B. Levy, 25 West Forty-third street, is attorney.

NEW YORK—F. H. Crawford & Co. have been incorporated with $15,000 capital to manufacture mining machinery by J. P. Beal, A. F. Ritterbush and C. M. Warner. Rush & Waldeyer, 141 Broadway, are attorneys.

NEW YORK—Hoffman & Scofield have been incorporated with $20,000 capital to manufacture iron and steel specialties by H. B. Scofield, W. C. Scofield and L. A. Kear. W. C. Scofield Jr., 41 Park Row, is attorney.

NEW YORK—Eldec Co. has been incorporated with 2500 shares $100 each and 3000 common no par value to manufacture electric appliances by A. E. Bonn, and C. E. Murray. F. Pufford, 111 Broadway, is attorney.

NEW YORK—American Ornamental Iron Works has been incorporated with $20,000 capital by I. Rabinwortz, H. Kaplowitz and F. Levins. M. Friedman, 930 Fox street, is attorney.

NEW YORK—Shrinktex Machine Corp. has been incorporated with $10,000 capital to manufacture cloth sponging machines by B. Adner, C. Cohen and B. Bennett. B. D. Golden, 396 Broadway, is attorney.

NEW YORK—E. B. Kelly Co. has been incorporated with $250,000 capital to manufacture machinery by E. B. Kelly, E. Kelly and C. J. Rahn. Davies, Auerbach & Cornell, 84 Nassau street, are attorneys.

NEW YORK—Sanitary Mechanical Specialty Co. has been incorporated with $25,000 capital to manufacture pumps by T. D. Toumey, J. D. Toumey and A. Briettger. A. L. Geilich, 175 Fifth avenue, is attorney.

NEW YORK—Venetian Art Metal Lamp Co. has been incorporated with $12,000 capital by A. Bernava, C. Bernava and W. Pagano. J. Applebaum, 44 Court street, is attorney.

NEW YORK—American Radiator Co., 40 West Fortieth street, is having plans made for several buildings to be erected on the former Pusey & Jones shipyard at Gloucester, N. J., to be built in the spring. Remodeling of some present structures also will be done.

NEW YORK—Vulcan Machine Co. has been incorporated to conduct a welding business with $10,000 capital by I. Schwartz and A. L. Weiss. M. L. Greenberg, 190 Joralemon street, Brooklyn, is attorney.

NEW YORK—Brown & Sites Co. has been incorporated with $50,000 capital to manufacture machinery by B. R. Brown and R. L. Sites. R. C. Brown, 342 Madison avenue, is attorney.

NEW YORK—J. L. Spitzer Co. has been incorporated to manufacture iron and steel devices with $30,000 capital by E. E. Spitzer, J. L. Spitzer and F. L. Sheridan. D. Cahn, 29 Broadway, is attorney.

NEW YORK—National Auto Body Service Corp. has been incorporated with $12,000 capital to manufacture automobiles by C. Slotchin, A. D. Berko and G. Goldberger. W. Lurie, 291 Broadway, is attorney.

NEW YORK—Cavanaugh Supply Co. has been incorporated with 300 shares common stock no par value to manufacture plumbers' supplies by M. A. Cavanaugh, L. M. Cavanaugh and J. J. Keupp. F. D. McGarey, 51 Chambers street, is attorney.

ASHEVILLE, N. C.—Asheville Supply & Foundry Co., D. S. Hilderbrand president, will build a plant consisting of a brass foundry, machine, pattern, welding and forge shops.

COOPER, N. C.—Matthews Vending Machine Co. has been incorporated with $100,000 to manufacture vending machines and other devices by Cyrus R. Matthews and Daniel A. Matthews.

GREENSBORO, N. C.—E. J. Talley Laundry Machinery Co., Battleground road, has been incorporated with $100,000 capital by E. J. Talley and associates.

McCLUSKY, N. D.—Harry E. Dickinson, city auditor, is taking bids for a pump of 1500 to 2000-gallons capacity per hour operating at 100-pounds pressure, an electric motor to operate pump, an enclosed magnetic switch, an enclosed float switch, and a diaphragm pressure switch.

WILLISTON, N. D.—Bids will soon be taken on a bridge with four spans of 318 feet each and a total length including approaches 2548 feet over Missouri river at Williston, to cost $700,000.

WILLISTON, N. D.—Montana-Dakota Power Co. will make following improvements in 1926: transmission lines between Glendive and Sidney, Mont.; Scobey and Bainville, Mont.; Bainville, Mont. east through Williston to Stanley, N. D.; Columbus through Powers Lake to White Earth, N. D.; new modern power station at Williston. Warren Jennison, Fairview, Mont., is general manager.

AKRON, O.—The Akron Brass & Aluminum Co. has been incorporated with $500 capital by C. A. Baird, C. C. Gillooly, A. J. Barron, A. L. McIner and Gertrude Hanson.

CINCINNATI—Cincinnati Mfg. Co., A. H. Shoenberger, president, Evans avenue and Gest street, will build a 5-story addition, 75x105 feet.

CINCINNATI—Eugene Berninghause Co., 1904 Western avenue, manufacturer of enameled iron, is having plans sketched for a 3-story addition 50 x 100 feet. J. M. Schmidt is in charge.

DAYTON, O.—Fenton Foundry Supply Co. has bought a site of five acres with two buildings at Gilbert and Masters streets.

MANSFIELD, O.—Ohio Brass Co. has been incorporated with $10,000 capital by Frank B.

Black, Harry S. Black, Claude V. Marks, Spencer B. Black and William A. Springer.

NEWARK, O.—Simpson Foundry & Engineering Co. is having plans made for a 1-story plant 120 x 200 feet.

PLYMOUTH, O.—Fate-Root-Heath Co. has given a contract to the Austin Co., Cleveland, for an addition, 60x200 feet, the first unit of an extensive building campaign.

TOLEDO, O.—Champion Spark Plug Co., R. A. Stranahan president, will build a 6-story addition, duplicating its present plant.

TOLEDO, O.—Radiator Engineering Co. has been incorporated with $500 capital by Richard D. Logan, K. M. Boblett, A. G. Vogt, Amos Lint and George Ireland.

ZANESVILLE, O.—Federal Radiator & Boiler Co., Theodore F. Schlade, general manager, Licking View, will build a 1-story addition, 122x126 feet.

TULSA, OKLA.—Tulsa Brass Casting Co. has been incorporated by O. E. French, and J. R. Johnson.

GRESHAM, ORE.—Bids have been asked by the city recorder of a steel standpipe reservoir, 25x64 feet, reinforced steel foundation and water main. Plans by H. L. Gilbert, engineer, Couch building, Portland, Ore.

MEDFORD, ORE.—Bids will be asked by city commission about Feb. 1 for Big Butte Falls municipal water project, requiring about 38 miles of steel line pipe.

CONSHOHOCKEN, PA.—Ford Foundry Co. has been incorporated with $10,000 capital to operate a foundry, machine shop and pattern shop by Albert E. Ford, 2039 Locust street, Philadelphia, John P. Cooney and Charles A. Baumert.

EAST COLUMBIA, PA.—O. K. Clutch & Machinery Co., manufacturer of friction clutches and hoists, is building a 1-story addition 70 x 140 feet. General contract to the Austin Co.

ERIE, PA.—Erie Malleable Iron Co. is building a metal shop addition to its plant at Fifteenth and Poplar streets.

GREENVILLE, PA.—Chicago Bridge & Iron Works, George Horton president, Chicago, will build an addition to its plant here 100 x 450 feet.

NORRISTOWN, PA.—American Equipment Co. has been incorporated with $5000 capital to manufacture bolts, nuts and rivets by David A. Longacre, Main street and Whitehall road, Norristown, John A. Longacre and Wallace M. Keely.

Refractories

FIRE CLAY BRICK

Per 1000 f.o.b. works

Pennsylvania, No. 1	$43.00 to 46.00
Pennsylvania, No. 2	35.00 to 40.00
Ohio, No. 1	43.00 to 46.00
Ohio, No. 2	38.00 to 40.00
Illinois, No. 1	40.00 to 43.00
Illinois, No. 2	35.00 to 38.00
Kentucky, No. 1	43.00 to 45.00
Kentucky, No. 2	40.00 to 43.00
Missouri, No. 1	43.00 to 46.00
Missouri, No. 2	35.00 to 38.00
Maryland, No. 1	43.00 to 47.00
Maryland, No. 2	39.00 to 42.00

SILICA BRICK

Pennsylvania	40.00
Chicago	49.00
Birmingham	48.00 to 52.00

MAGNESITE BRICK

Per Net Ton Seaboard Base

9 x 4½ x 2½	65.00

CHROME BRICK

(Per Net Ton)

9 x 4½ x 2½	45.00 to 48.00

MILWAUKEE—The Milwaukee Bridge Co. is lowest bidder at $28,320 for furnishing the machinery and structural steel required for miscellaneous work in connection with the completion of the new sewage disposal plant on Jones Island.

MILWAUKEE—Bids close Dec. 30 with the board of school directors, Frank M. Harbach, secretary, for the erection of the new Concordia Avenue junior high and pre-vocational school at Thirty-seventh street. The plant will cost close to $400,000 complete.

MILWAUKEE — Neacy - Koen - Diercksmeier, Inc., has been organized with 120 shares of no-par common stock to manufacture all kinds of machinery, parts and appliances, castings, forgings, stampings, etc. The incorporators are Ralph C. Neacy, Walter C. Koehn and Harold J. McGrath, attorney.

MILWAUKEE—A charter has been granted to the Simple Snap Curtain Fastener Co., Milwaukee, capitalized, at $25,000 to manufacture goods and materials of metal, principally snap fasteners for automobiles, clothing, etc. August C. Moeller, 105 Wells street, attorney, is representing the incorporators.

SHEBOYGAN FALLS, WIS.—Contracts have been let by the Pine Auto Co. here for the construction of a $35,000 garage and repair shop, 60x120 feet, and work will commence immediately. The plans are by Architect Edward A. Juul, Sheboygan, Wis.

TREGO, WIS.—Wisconsin Hydro-Electric Co., E. J. Schneider, president, Amery, will build power plant and dam on Namakagon river near Trego. Ralph D. Thomas, 1200 Second avenue, South Minneapolis, is the engineer.

Business in Canada

VANCOUVER, B. C.—The Wallace Foundry Co., now operating a large steel and bronze furnace here, will add a new electric furnace to its equipment at a cost of $25,000. Other improvements are also to be made.

VANCOUVER, B. C.—The Asser Diesel Engines Ltd., financed by local capital will establish a plant here for the manufacture of an improved type of diesel engine. Sydney Asser is organizer and manager of the new concern and has been backed by the Canadian Financiers Trust Co.

OXFORD JUNCTION, N. S.—The Canadian National railways will rebuild roundhouse here recently destroyed by fire with loss of $75,000.

WEYMOUTH, N. S.—The town council will award contracts immediately for equipment for electric lighting plant and system.

HAMILTON, ONT.—The National Steel Car Corp. will immediately enter into the manufacture of six-wheel busses. The vehicles will be assembled in a department organized and equipped for the purpose, while bodies for the busses will also be turned out here.

NIAGARA FALLS, ONT.—T. S. Scott, city engineer, is in the market for tools and machinery for machine shop at municipal paving plant.

PORT ARTHUR, ONT.—The Thunder Bay Paper Co. Ltd., is having plans prepared for a newsprint mill here to cost $1,000,000.

WINDSOR, ONT.—G. Ballantyne, 313 Pitt street east, has awarded contract to S. E. Dinsmore Co., Wyandotte street, for a machine shop and boiler room.

CAP DE LA MADELEINE, QUE.—The St. Maurice Paper Co. Ltd., Canada Cement building, Montreal, Que., is having plans prepared for the erection of a slasher mill here.

MONTREAL, QUE.—Cutten & Foster, 236 Shrebrooke street west, will start work immediately on a factory on Dorchester street here. G. Martel, 5626 Park avenue, has contract for foundation.

New Trade Publications

DRILLS—Morse Twist Drill & Machine Co., New Bedford, Mass., has issued a leaflet calling attention to lasting quality of its high speed drills, with comparison of its forged and milled types.

SCALES—Measurement of materials by weight to give greater accuracy than other methods is treated at length in a booklet by the Toledo Scale Co., Toledo, O. The subject of losses by improper measurements is discussed and the remedy suggested.

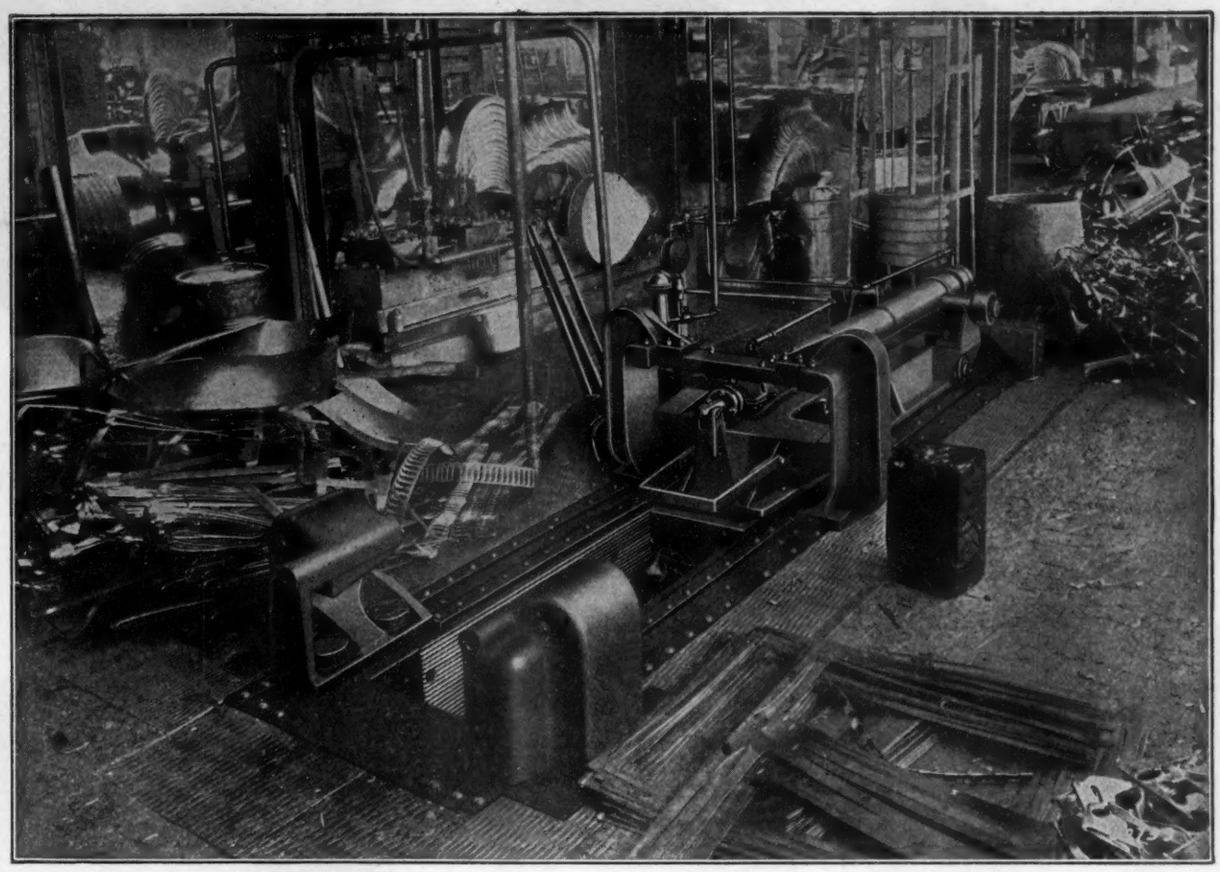
HOISTS AND HOISTING—Applications of hoists to a varied line of uses are described in a handbook issued by the Novo Engine Co., Lansing, Mich. It is not a catalog and confines its material to use of the apparatus. Methods of using hoists are suggested and much engineering information in tabular and other forms is given. Illustrations show installations and actual operation.

MELTING POTS—Electrically heated pots for melting solder, lead, babbitt, type metal and similar materials are described and illustrated in a bulletin by the General Electric Co., Schenectady, N. Y. Cleanliness, reduced fire hazard and close control of metal temperature are urged as advantages over the fuel-heated pot.

CORROSION RESISTANT ALLOY—DuPont Everdur Co., Wilmington, Del., has issued a booklet describing its special alloy designed to resist chemical action and its applications to various industrial uses. The booklet contains much information on corrosion and resistance of the alloy to various acids. Its working qualities are described, how it is melted, cast and poured and preparation of molds.

RAIL BOND TESTERS—A bulletin covering its apparatus for testing the conductivity of rail bonds has been issued by the Roller-Smith Co., Bethlehem, Pa. Two types, with and without an external source of current. Construction and operation of the devices are covered in detail.

ARC WELDING SETS—Gas engine driven sets for arc welding, stationary or portable, are illustrated in a bulletin by the General Electric Co., Schenectady, N. Y. It is driven by a 4-cylinder internal combustion engine and consists of a 200-ampere self-excited arc welding generator and control. Full details of construction of both engine and generator are presented.



Typical Installation in Well-Known Automobile Plant

WHY SHEET-SCRAP CAN BE PROFITABLY COMPRESSED

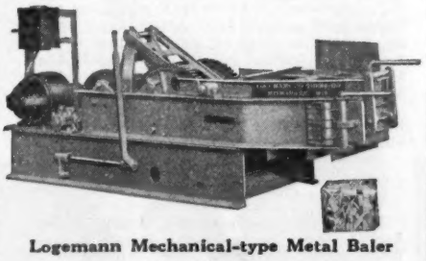
It commands at all times the best price;
It can be more conveniently stored;
It can be more economically handled;
It can be readily held for favorable markets;
It practically eliminates corrosion;
It permits of loading cars to capacity;
It saves much heat in remelting.

LOGEMANN SCRAP-METAL PRESSES

Hydraulic and Mechanical Types

LOGEMANN BROTHERS COMPANY
3126 Burleigh St. Milwaukee, Wis.

Also presses making crucible-size bricks of copper, brass, aluminum and other metals.



Logemann Mechanical-type Metal Baler

Please indicate character of scrap, quantity and heaviest gauge, when writing.

Discounts and Extras

Steel Pipe

Pittsburgh and Lorain basing discounts, jobber's carloads.

Evanston, Ill., and Indiana Harbor, Ind., take differential 2 points less discount of $4 per ton higher net.

Chicago takes differential 2½ points less than Pittsburgh-Lorain basis or $5 per ton higher net.

Butt Weld

	Black	Galvanized
⅛-inch	45	19½
¼ and ⅜-inch	51	25½
½-inch	46	42½
¾-inch	60	48½
1 to 3-inch	62	50½

Lap Weld

2-inch	55	43½
2½ to 6-inch	59	47½
7 to 8-inch	56	43½
9 and 10-inch	54	41½
11 and 12-inch	53	40½

REAMED AND DRIFTED

Butt Weld

1 to 3-inch	60	48½

Lap Weld

2-inch	53	41½
2½ to 6-inch	57	45½

EXTRA STRONG—PLAIN ENDS

Butt Weld

⅛-inch	41	24½
¼ and ⅜-inch	47	30½
½-inch	53	42½
¾-inch	58	47½
1 to 1½-inch	60	49½
2 to 3-inch	61	50½

Lap Weld

2-inch	53	42½
2½ to 4-inch	57	46½
4½ to 6-inch	56	45½
7 to 8-inch	52	39½
9 and 10-inch	45	32½
11 and 12-inch	44	31½

DOUBLE EXTRA STRONG

Butt Weld

½-inch	42	12½
¾ to 1½-inch	45	35½
2 to 2½-inch	47	37½

Lap Weld

2-inch	41	32½
2½ to 4-inch	43	34½
4½ to 6-inch	42	33½
7 to 8-inch	33	25½

(Note—Large jobbers obtain additional preferential discounts of 1 and 5 on black and 1½ and 5 on galvanized.)

Wrought Iron Pipe

Pittsburgh basing discounts, jobbers' carloads. Individual quotations made on delivered basis

TREADS AND COUPLINGS

Butt weld

¼ and ⅜-inch	+11	+39
½-inch	22	2
¾-inch	28	11
1 to 1½-inch	30	13

Lap Weld

1¼ and 1½-inch	Upon application	
2-inch	23	7
2½ to 6-inch	26	11
3 to 6-inch	28	13
7 to 12-inch	26	11

PLUGGED AND REAMED

Two points less than above

EXTRA STRONG, PLAIN ENDS

¼ and ⅜-inch	+19	+54
½-inch	21	7
¾-inch	28	12
1 to 1½-inch	30	14

Lap Weld

2-inch	23	9
2½ to 4-inch	29	15
4½ to 6-inch	28	14
7 to 8-inch	21	7
8 to 12-inch	16	2

DOUBLE EXTRA STRONG

Butt Weld

½-inch	+47½	+59½
½-inch	+28	+40
1-inch	+34	+40
1¼-inch	+28	+40
1½-inch	+27	+39

Lap Weld

2 and 2½ inches	+13	+25
3 to 4-inch	+ 8	+17
4½ to 6-inch	+ 9	+18
8-inch	+12	

(Note—Large jobbers obtain additional preferential discounts of 1, 5 and 2½ on black and galvanized.)

Boiler Tubes

Pittsburgh less carload discounts. Carload 4 points larger

STEEL (Lap Welded)

2 and 2¼-inch	23 off
2½ and 2¾-inch	33 off
3-inch	36 off
4¼ to 3¾-inch	38½ off
4 to 13-inch	42 off

(Note—Additional discounts of 5 to 7 extra 5 per cents now being given.)

CHARCOAL IRON

1½-inch	+22
1¾-inch	+12
2 and 2¼-inch	+ 2
2½ to 3-inch	3
3¼ to 4½-inch	5

(Note—Additional discounts of 2 or 3 extra 5 per cents now being given.)

SEAMLESS COLD DRAWN

1-inch	56 off
1¼ and 1½-inch	48 off
1¾-inch	32 off
2 and 2¼-inch	27 off
2½ and 2¾-inch	35 off
3-inch	41 off
3¼ and 3½-inch	43 off
4-inch	46 off
4½, 5 and 6-inch	41 off

SEAMLESS HOT ROLLED

2 and 2½-inch	30 off
2½ and 2¾-inch	38 off
3-inch	44 off
3¼ and 3½-inch	46 off
4-inch	49 off
4½, 5 and 6-inch	44 off

SEAMLESS STEEL MERCHANT BOILER TUBES

Extras:

Add $8 per ton for more than four gages heavier than standard and add 10 per cent to theoretical weight.

Add 5 per cent for lengths over 24 feet and not over 26 feet.

Smaller tubes than 1-inch and lighter than standard gage to be sold at mechanical tubing list and discount.

Intermediate sizes and gages not listed above take price of next larger outside diameter and heavier gage.

SEAMLESS STEEL MECHANICAL TUBING

Base Discounts on New List July 1, 1925

Carbon 0.10 to 0.20 per cent.....50 to 55 off
Carbon 0.30 to 0.40 per cent.....45 to 50 off

SEAMLESS STEEL LOCOMOTIVE AND SUPERHEATER TUBES

Net prices per foot f.o.b. Pittsburgh

Outside diameter	Gage	Price
2-inch	12-gage	14¼c
2-inch	11-gage	15c
2-inch	10-gage	16c
2¼-inch	12-gage	16c
2¼-inch	11gage	17c
2¼-inch	10-gage	18c
3-inch	7-gage	33c
5¾-inch	9-gage	50c
5½-inch	9-gage	52c

Plus usual extras for forming and for long lengths over 18 feet and for commercially exact lengths.

Plate Extras

BASE

Rectangular plates, tank steel or conforming to manufacturers' Standard Specifications for structural steel, dated Nov. 24, 1922, or equivalent, ¼-inch thick and over on thinnest edge, (except for ¼-inch or 72 inches wide when ordered to weight in pounds per square foot—see width and gage extras), 100 inches wide and under, down to but not including 6 inches wide, 5 feet 0 inches long up to published limit in length but not over 80 feet 0 inch, are base. Extras per pound for width or diameter.

All Plates, Rectangular or Otherwise

¼-inch thick and heavier, but not less than 11 pounds per square foot, if ordered to weigh—

Over 100 inches to and including 110 inches	.05c
Over 110 inches to and including 115 inches	.10c
Over 115 inches to and including 120 inches	.15c
Over 120 inches to and including 125 inches	.25c
Over 125 inches to and including 128 inches	.50c

Plates less than ¼-inch or lighter than 11 pounds per square foot.

Over 72 inches to and including 84 inches	.10c
Over 84 inches to and including 96 inches	.20c
Over 96 inches to and including 100 inches	.30c

Over 100 inches add .35c to width extras for plates ¼-inch thick and heavier.

GAGE

Plates not Exceeding 72 inches Wide

Plates less than ¼-inch gage, to and including $\frac{7}{32}$-inch; or lighter than 10.2 pounds per square foot to and including 7.65 pounds per square foot ..... .20c

Plates Over 72 Inches Wide

Plates less than ¼-inch gage, to and including $\frac{7}{32}$ inch; or lighter than 11 pounds per square foot, to but not including 7.65 pounds per square foot ..... .20c

Plates ordered 7.65 pounds per square foot ..... .30c

QUALITIES

Pressing steel	.10c
Flange steel (boiler grade)	.15c
Ordinary firebox steel	.20c
Stillbottom steel	.30c
Locomotive firebox steel	.50c
Marine steel	1.50c
Hull material subject to U. S. Navy Dept. Specifications for Medium or Soft Steel	.10c
High tensile hull steel subject to U. S. Navy Dept. or equivalent specifications	1.00c
Boiler steel subject to U. S. Navy Dept. Specifications, classes A and B	1.50c
Hull plates to hull specifications, required to stand cold flanging, take extra for flange steel.	

Floor Plates

Checkered plates 1.75c

Chekered plates are not furnished to sketch and are rolled from "Stock Steel" only. No physical tests will be made on checkered plates.

INSPECTION

Mill inspection .....No extra

Charges for other inspection, such as Lloyd's or American bureau of shipping, will be made by inspection bureau direct to buyer.

CUTTING

LENGTH OR DIAMETER

All Plates, Rectangular or Otherwise

Five feet and over up to published limit of length, but not over 80 feet....No extras

Under 5 feet to 3 feet inclusive	.10c
Under 3 feet to 2 feet inclusive	.25c
Under 2 feet to 1 foot inclusive	.50c
Under 1 foot	1.55c
Over 80 feet to 100 feet inclusive	.25c

Over 100 feet add .25c plus .05c for every additional 2 feet or fraction thereof.

Regular Sketches

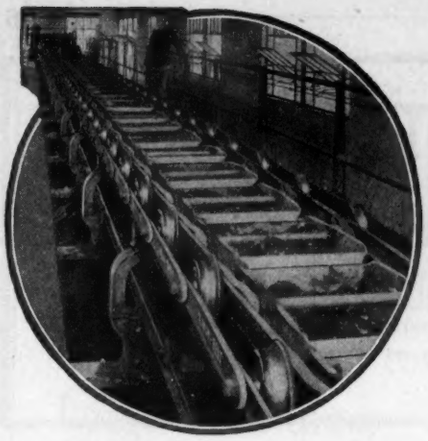
With not more than four straight cuts. (including straight taper plates)

Additional extra ..... .10c

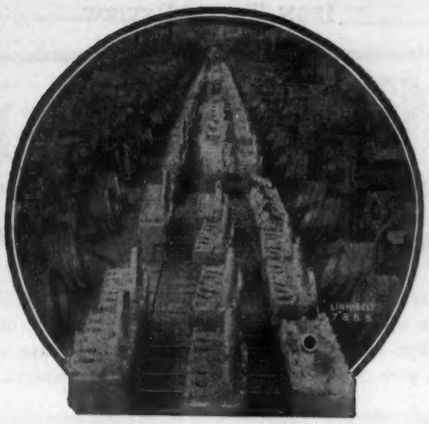
Irregular Sketches

With not more than four straight cuts. (Sketches cannot be sheared with re-entrant angles)

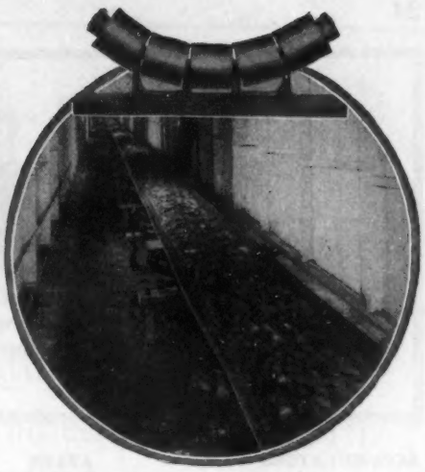
Additional extra ..... .20c



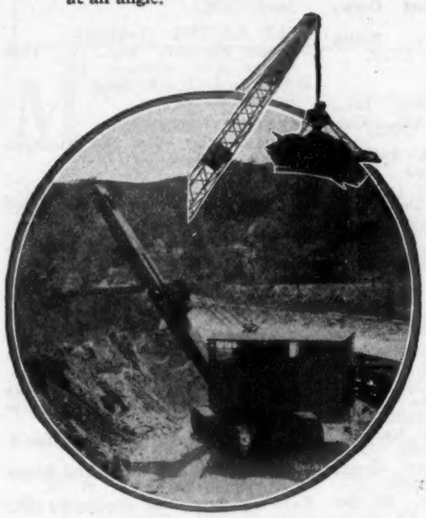
The Peck Pivoted Bucket Carrier is used for handling coal, ashes, cement, sand and other materials. Transports materials horizontally, vertically, or at an angle.



Progressive assembly Link-Belt Conveyors are used in various kinds of manufacturing plants. There may be a suggestion here for you. Consult with Link-Belt engineers.



Link-Belt furnishes complete belt conveyor installations for handling raw or finished, light or heavy materials—at any desired speed.



Unusually rugged, fast, and economical to operate, Link-Belt "Built for Service" Gasoline Crawler Cranes provide quick, cheap handling. Various attachments furnished. Write for Book 795.

Link-Belt Equipment for Every Service

SAVING time, labor and power—producing with greater efficiency, at lower costs, and in larger volume than would otherwise be possible—these are some of the important results being accomplished with Link-Belt machinery.

For the transmission of power from prime mover to machines, Link-Belt Silent Chain, and other types of Link-Belt chain drives, are widely used. For handling raw and finished materials of every kind, Link-Belt conveyors, elevators, cranes, electric hoists, and practically every other type of mechanical handling equipment, are effectively employed.

To find out how you can produce more economically with Link-Belt elevating, conveying and power transmission equipment, address nearest Link-Belt office.

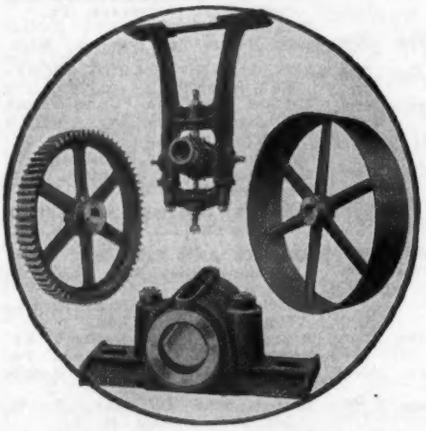
LINK-BELT COMPANY

Leading manufacturers of Elevating, Conveying and Power Transmission Machinery

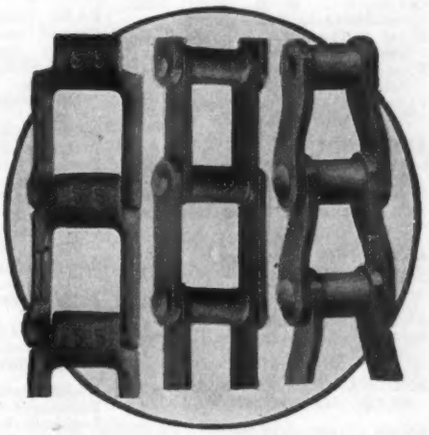
PHILADELPHIA, 2045 Hunting Park Ave.
CHICAGO, 300 W. Pershing Road
INDIANAPOLIS, 200 S. Belmont Ave.

Offices in Principal Cities

Link-Belt Silent Chain is the ideal drive, because it is a strong, long-lived, positive, yet flexible means of transmitting power. Drives from ½ to 10 H. P. in stock at a distributor near you.



Power transmission equipment, rugged and well constructed for continuous operation, bearings, gears, hangers, pulleys, sprockets, grease cups, safety collars, etc.



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